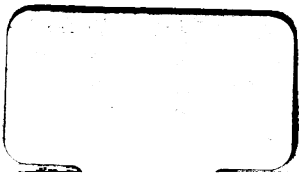
GRADED OUTLINES IN HYGIENE

COBB



GRADED OUTLINES IN HYGIENE

BOOK ONE

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In the belief that oral instruction in the laws of hygiene can be given with profit to children too young to read and study a textbook in the subject, this book has been written and published. It is hoped that teachers will find it a helpful guide to a progressive and unified series of lessons that will have a lasting effect on children's health habits. Certainly in no field can knowledge be applied with greater results than in that of hygiene

PRINTED IN THE UNITED STATES OF AMERICA

TO
ALL LITTLE PEOPLE
AND ESPECIALLY
TO
VIVIEN EVELYN COBB

PREFACE

THE school curriculum as well as the school child may suffer in health. Both are subject to conditions which handicap their success. In the case of the curriculum, the adverse condition, more often than anything else, is inanition. And strangely enough, it is Hygiene that suffers most as a general rule. It seems incongruous that a subject which ought to be invaluable in influencing the health of every school child should be the invalid of the curriculum. The encouraging thing about the situation is that the period of convalescence seems to have arrived. The importance of health work in the schools is being realized as never before. The work does not stop with instruction: the teacher follows it up with the kind of stimulus that makes the informational aspect of hygiene carry over into every phase of activity.

Volumes have been written on the therapeutics of Hygiene. Some prescriptions have been empirical; others have been prepared after a careful diagnosis of the patient's condition and a study of its needs. Many of the best texts, however, lack the necessary directions. Too much seems to have been left to the teacher who administers the tonic. Not infrequently the teacher has neither the professional training nor the time required for assuming with any large degree of success the responsibility of looking after our sick, albeit convalescing, subject — Hygiene.

If it develops that the lesson outlines suggested here serve in some measure as stimulating doses of health instruction that the teacher can successfully administer, the purpose of this book will have been served. Like

other kinds of medicine, these doses must be given regularly, frequently, intelligently, and persistently. Their efficacy must depend also in a large degree upon the personality of the teacher. She must believe in the potency of her prescriptions. What is more, she must follow up her professional advice with sufficient interest to see that the information is translated into action. She must "teach lessons in hygiene, not merely hear lessons in hygiene."

An effort has been made to develop these lessons so that interests which arise from a well-taught lesson in hygiene will be constantly finding expression in the other subjects of the curriculum. A period devoted to the consideration of some historical incident may unexpectedly (to the child) lead to discussion of a hygienic principle that finds its application in the history lesson. A lesson about the voyage of the Pilgrims, in which the political and religious motives for making the adventure are briefly explained, may easily lead to a discussion of liberty and give opportunity for pointing out that freedom from disease is one form of liberty that can be secured only at the cost of continual battle with our disease enemies. Other lessons find their application in mythology, nature study, fiction, industry, care of animal pets, etc. Many of these lessons are so closely related to other topics and subjects that it does not appear evident to the pupil that hygiene as a required study is being considered. The larger interests of the child are made the approach to lessons in health.

The author finds it impracticable to acknowledge individually his indebtedness to all who have con-

tributed, directly or indirectly, to the preparation of this book. Many texts have been consulted; numerous magazines and journals have been searched for useful material; some most valuable suggestions have come from papers presented at meetings on health and physical education. Much help has also come from conferences with specialists in the field of health education. Among those who have contributed most freely with their expert knowledge and who have been of inestimable assistance with their suggestions and kindly criticism, are: Dr. Thomas A. Storey, Executive Secretary, United States Interdepartmental Social Hygiene Board; Francis T. McSherry, formerly superintendent of schools, Holyoke, Massachusetts; Dr. Willard S. Small, Chief of the Division of Hygiene, Federal Bureau of Education (now on leave of absence with the United States Interdepartmental Social Hygiene Board); Prof. John W. Ritchie, author of the New-World Health Series and other books on health education; and Miss H. P. Gorman, of the Boston public schools.

It is with much gratitude that the author acknowledges also the very helpful encouragement he has received from his wife, Vivien MacConnell Cobb.

WALTER F. COBB

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GRADED OUTLINES IN HYGIENE

BOOK ONE

KINDERGARTEN

General Suggestions

The daily activities, interests, and experiences of children of the kindergarten age offer excellent opportunities for teaching simple lessons in hygiene. The practice of health habits can best be secured, with children of this age, through the medium of short and informal discussions of incidents, pictures, and stories having an intimate relation to the child's interests and containing a lesson in hygiene.

Special character of health instruction in the kindergarten. It is perhaps inaccurate to speak of "lessons" in health for this grade, as the word implies a formal laying out of the work in a way to develop the subject, which can not be done with kindergarten children. With them, a great deal of health instruction will be incidental, and much of it will come from what they see the teacher do. For example, when the teacher sends a sick child home, a simple statement — made at the moment — that she sends him home to help him get well quickly and to protect the others from the danger of catching his sickness, will be much more impressive to small children than a special lesson on the dangers of infection. In whatever way the health instruction is given, the field covered at any one time should be very limited.

At times instruction will of necessity take the form of a simple statement which the child must accept on the teacher's authority. In teaching any subject to young children it is often difficult to decide how much of reason and explanation to give, and with health instruction this is particularly the case; for to give the reasons underlying many of the rules of health would result in spending altogether too much time in laying a basis of information, before the explanation could be understood. Not all that is outlined in the following pages will seem to the teacher useful for her class; each teacher must decide for herself how much her particular circle of children is capable of comprehending.

Object of health instruction in the kindergarten. The teacher's primary purpose in the kindergarten is not to give information, but to secure the formation of simple health habits on the part of the children and to train them to be on the watch for unhygienic conditions. It is very important to keep constantly in mind that the conduct of the child in regard to hygiene is best directed through example, motive, and continuous practice.

It is not always easy to differentiate between two classes of habits, — those that are related both to health and to good manners, and those that are a question only of manners. No one doubts that it is a good thing for children to be neat and clean, or that it is desirable for them early to become independent in keeping themselves presentable. There is not always, however, so close a connection between neatness and good health as many persons have been

accustomed to think; some of the personal habits in which the children must be trained are to be encouraged on other grounds than relation to health, as for the sake of self-respect, to win the approval of others, or in fairness to others (since untidiness and disorder make work for other people). The teacher can insist on right personal habits without always troubling herself to decide whether what she is teaching is ethics or good manners or health: but in the interests of accuracy it is best not to yield to the temptation to claim a health rule as the basis for every line of conduct recommended. Teach children to observe correct health manners for about the same reasons that you teach them to observe good manners in general. It is a sign of poor training for a child to "slam the door in another's face." It is equally bad manners to cough in another's face. The practice of good manners will do much toward preventing disease without a single thought being given to the subject.

The connection of hygiene, cleanliness, and orderliness with social responsibility is a close one. In general the fact may be emphasized that by cleanliness, orderliness, and attention to health rules we make less work for ourselves and for other people. Helpfulness at home is an important part of the training of children, and this also correlates very closely with the health instruction.

It is sometimes said that it is useless to give health instruction to small children, because they themselves can do little to determine the conditions in which they live; in nearly everything they are completely under the direction of other persons. But even the kinder-

garten age is not too early to begin the child's instruction in hygiene, and the kindergartener can do much to put the children in a frame of mind to follow their parents' directions willingly. It is no small thing to lead them to be reasonable about eating simple food instead of clamoring for what is not good for them, to reconcile them to going to bed promptly and early, to make them conformists instead of insurrectionists in the matter of washing their hands before meals, and so on.

Organization of the material. The suggestions on pages 1 to 6 are a mixture of instruction to be given to the children and advice and information for the teacher herself. The teacher will have no trouble, it is hoped, in discriminating between the two groups. The exact arrangement of the material offered is left to the teacher; it is assumed that as she already understands children and knows the general principles of health education, her need is for material rather than for specific directions in the presentation of the lesson.

While formal lesson periods in hygiene are out of the question in the kindergarten, opportunities to give incidental instruction in health principles are constantly presenting themselves. The material suggested in the following pages is best presented when natural opportunities for introducing it occur. There are, however, certain occasions in the kindergarten child's day when mention of these subjects will be most natural or will be most closely connected with what is going on. Therefore the greater part of the material suggested is grouped under the routine of the daily program (pages 7 to 19) and the free conversation

periods (pages 19 to 37), instead of being laid out week by week, as it is for the later years. A short section on personal habits to be corrected (pages 37 to 39) summarizes a few particular habits common to children, many of which are mentioned in the sections preceding. There is also a short section on physical education (pages 39 to 41).

Besides adapting the material to the capacity of her circle of children, the kindergartener must also adapt it somewhat to the social conditions in which most of the children live. The same general health habits are advisable for all children; but the way in which the household work is carried on at home, the facilities for personal cleanliness, and the children's background of personal experiences will differ from school to school. The kindergartener must exercise tact in giving explanations and illustrative examples and in the general tone of her recommendations.

Many of the usual devices for securing interest may be applied to the instruction in hygiene. For instance, gold paper stars may be given to pupils as rewards for the practice of "the rules of the health game"; or there may be a particular place on the blackboard reserved for an honor roll. That the Mother Goose rhymes, familiar to every child, can be used to teach lessons in hygiene, has been demonstrated by the Metropolitan Life Insurance Company, which has prepared and printed for distribution a little booklet called *The Metropolitan Mother Goose.* The familiar rhymes have been changed so as to make them tell health stories.

Make use of the child's interest in dramatization in

teaching lessons on social manners and health manners; most of the common activities of children can be dramatized with little effort. Social and educational values as well as hygienic values can be emphasized; instruction in hygiene should be integrated — not submerged, and not over-accentuated — in the school program.

The School Child's Health, a recent publication of the American School Hygiene Association, contains much valuable material. See also the bibliography on page 208.

The construction of a miniature house of wood or cardboard is effective in working out some of the hygiene lessons in a practical way. Often demonstration with a doll or with one of the children as a subject will be found useful.

KINDERGARTEN — FIRST AND SECOND TERMS

Central Topic: *Health Habits*

(A) THE DAILY PROGRAM

(1) Opening of School
(2) The Morning Circle
(3) Class Work
(4) Luncheon

(B) CONVERSATION

(1) Morning Routine
(2) Mother's Duties
(3) Father's Duties
(4) Trades and Occupations
(5) Health and Sickness

(C) PERSONAL HABITS

(D) PHYSICAL EDUCATION

(A) THE DAILY PROGRAM

The usual changes in the daily program offer occasions for insisting on the observance of rules related to health. It must be kept in mind that even young children are more obedient to a rule the purpose of which they understand than to one that is simply laid down as the teacher's law, and it is therefore well to give the explanation when the rule is given or the practice insisted upon. But as much that is taught to young children must be repeated time and again, there will always be more than one opportunity to bring in explanations, and the teacher need not feel under obligation to deal completely with a subject the first time it is mentioned. She is urged to keep in mind, however, the importance of doing so sometime during the year.

(1) *Opening of School*

The use of the doormat. Train the children to use the doormat as they enter the room. Explain how dirt and germs are tracked indoors, at home and at school. In the home the dirt and germs get on the floors and rugs and perhaps find their way to the hands and into the mouth of the creeping baby; or they dry and become dust which people may breathe. Explain what dirt is and show how it is different from earth. Children who track dirt indoors at home greatly increase the amount of work that mother has to do in cleaning house. "Dirt" may be good for plants, but not for children.

To understand what is given in the preceding paragraph, the children must have some idea of what is meant by "dirt" and by "germs." It may be advisable to explain that "dirt" consists of earth, excretions from the bodies of animals (including human beings), fuzz, lint, hair, feathers, pulverized minerals, water, etc. This substance which we call "dirt" is of course unsightly, and it should be removed from the person and the home.[1]

In giving children an idea of the nature of germs, care must be taken to avoid developing a case of "bacteriophobia." The discussion must be limited, and the expressions must be adapted to the children's

[1] While every one appreciates the fact that dirt does not breed disease and that the increase of disease in the home as a result of tracking dirt indoors is not ordinarily a serious factor, yet the fact remains that dirt is unsightly and is an index of the hygienic habits of the housekeeper and other members of the family. Furthermore, dust in large amounts may act as a mechanical irritant to the nose, throat, and lungs.

comprehension. The teacher must be familiar with many facts which the child need not know, although they are essential to an accurate scientific explanation.

Infectious diseases are due to the presence of bacteria (microscopic plants), protozoa (low forms of animal life), ultra-microscopic organisms (filtrable viruses of unknown character), metazoa (higher forms of animal life; that is, worms), or fungi (parasitic plants of higher form than bacteria). The first three classes are commonly grouped together and spoken of as "germs." However, the word "germ" is very often used as a more general class name for all micro-organisms, including bacteria and protozoa which do not cause disease (non-pathogenic); for example, the bacteria that cause souring of milk or putrefaction. In these outlines "germ" is used for all micro-organisms, and "disease germ" is used to specify the pathogenic forms when necessary. Sometimes the expression "non-pathogenic germs" also is used.

For the purpose of explaining the cause of infectious diseases to the class, it is sufficient to point out that they are caused by germs, which are usually very small plants or very small animals, so small that they can not be seen without the aid of a strong microscope, which makes them look several hundred times as large as they really are.

The teacher may introduce the subject by asking the children what diseases they know that children catch from each other. They will probably mention measles, whooping cough, diphtheria, chicken pox, perhaps scarlet fever. Tell them that when

their grandmothers and grandfathers were little, people did not know what caused these diseases, or how one person could catch them from another; but now we know that these diseases are caused by certain germs that are transferred from one person to another. When a child has one of the infectious diseases, the germs which cause that disease are thrown off in the secretions and excretions of his body; and if some of these germs find their way into the body of another child, they may give the same disease to the other child.

One of the most frequent ways in which germs leave the body is in the sputum. Germs are also thrown off when a person coughs or sneezes, and sometimes when he laughs or talks in a loud manner. When a person who has one of the infectious diseases spits on the sidewalk, there is danger that his sputum may get on the shoes of passersby, who may then carry this sputum into their homes. If people wipe their shoes carefully on the doormat before they go indoors, there is less likelihood that infected sputum will be carried indoors and deposited on the rugs and floors. Mention the anti-spitting law.

Germs are so small that millions of them can swim in a drop of water. They are so light that they float for a short time in the air, and at times they may carry disease from one person to another in this manner. When a person coughs, millions of these small germs may be thrown into the air, — sprayed as if from an atomizer or from a hose, — and if another person is near enough to inhale the living germs, disease may result.

The teacher must bear in mind at all times that the number of different kinds of pathogenic micro-

organisms is very small (about one hundred), and the number of forms commonly found in this country is much less. Some people, especially children, have the impression that disease germs are ubiquitous. This is far from true, for most of the parasites that cause disease can live for only a very short time when removed from their natural host (human beings, animals, and insects). Many diseases are contracted almost directly from human sources.

Wet clothing. It is always best to brush snow from the clothes before going into the classroom, because if much snow is left on the clothes, they become damp when it melts. A person who sits in wet clothing may become chilled and may contract a cold or a sore throat. Wet or muddy rubbers and rubber boots must be left in the cloakroom, not worn in the classroom. Even when they are not wet, rubbers and rubber boots should be removed indoors. This is done to avoid the likelihood of perspiring feet and the danger of a subsequent cold. Sometimes damp stockings cause an unpleasant odor, which is not desirable. "Keep the feet dry" is an excellent two-foot rule. There is another reason for taking off the rubbers—it means less dirt carried into the classroom and a more sanitary-looking school.

It is well for the teacher to note the difference between "sanitary school" and "sanitary-looking school." A room might be quite as sanitary from the standpoint of disease prevention if mud and dirt were tracked indoors. But unless the teacher recognizes the fact that there are many reasons for teaching children to be clean, aside from that of disease prevention, she will

fail in her work as an educator, no matter how much success she attains as a teacher of hygiene.

The children need to understand why it is unwise to sit in wet clothing. Tell them that some of the germs that cause colds are in the mouths of many persons most of the time. However, these germs are unable to cause a cold because the "soil" in the person's body, particularly the nose, throat, and lungs, is not usually suitable for their growth. Wet clothes chill the body as they dry if too much of the body's heat is used up in the process. Experience shows that the resistance of the body to disease, especially diseases of the nose, throat, and lungs, is decreased by chilling the surface of the body.

Encourage children to change their wet clothes as soon as possible. If they live near the school it may be advisable to send them home. Some schools make provision for supplying dry stockings to children. Occasionally children may be given seats near the radiator or the stove.

Brushing the clothes. The clothes brush is to be used in the hall or out of doors. It is always good hygiene to have as little dust in a room as possible. Ask the children which is easier — to make the home (or the classroom) clean, or to keep it clean.

The teacher should understand that sanitarians have changed their view of the part played by dust in the spreading of disease germs, which was formerly thought to be a highly important one. Recent researches have forced them to believe that the amount of disease carried by germs in dust is relatively of little importance. It is possible that dust particles may

serve at times as buoys for the attachment of disease germs, but it is very likely that these germs have ceased to be possible factors in the spread of disease, because of the drying which has taken place prior to their attachment to dust particles. A study made of the street sweepers in one of the large cities not long ago failed to show an unusual occurrence of disease among them, even of the respiratory tract. Yet we know that there are living germs in the air; cultures taken on Petri dishes exposed to the air show growth. These growths are usually due, however, to the non-pathogenic germs — germs which do not cause disease. Infection does take place at times through the air, but almost always at short range — a few feet from one who has an infectious disease and coughs and sneezes in an unguarded manner.[1] Keep the dust down, but not so much for the purpose of avoiding the bacterial causes of disease, as for the purpose of avoiding the mechanical causes. It is splendid to be clean and have the house clean, but no one should be deceived into thinking that this is a sure way to escape disease.

The cloakroom. Each child should have an individual hook for his coat and hat. This teaches orderliness and prevents confusion at the close of school. Rubbers may be marked inside with the owner's name or tagged with clothespins bearing the owner's name. Pupils must be trained to carry their handkerchiefs with them into the classroom; otherwise they are likely

[1] Recent experiments in connection with the spread of infectious diseases by means of poorly washed eating utensils have given some foundation for the belief that perhaps the major part in the transmission of the respiratory diseases is played by hand infection.

to leave their handkerchiefs in their overcoat pockets, or perhaps at home.

The cloakroom should be light, ventilated, and heated when necessary.

(2) *The Morning Circle*

Health Inspection. The morning circle is often the teacher's first opportunity to observe the presence of any unusual condition in the appearance or actions of the children, and this is something that should always be noted as early in the school day as possible. The more urgent conditions to inquire into are eruptions, running eyes, discharging nose, flushed face, coughs, indications of sore throat (as bandage around the neck, or unnatural voice), and vomiting. Isolate suspicious cases if the school has a health inspector or a school nurse whose services will be available within a short time. If there is no school doctor or school nurse, consider seriously the advisability of sending the child home under the care of the pupil who usually takes charge of that child. If contagious disease is suspected, the parents may be sent for; or some grown person—the janitor, possibly — may be sent home with the child. It is not wise to expose other children to an infectious disease by sending them home with the sick child.

The conditions just mentioned are those which lead the teacher to suspect the onset of an acute illness. Conditions that should be noted as evidence of chronic physical defects are signs of emaciation, pallor, nasal voice, languor, and mouth breathing. A child with these signs needs medical treatment, but is not an immediate cause of danger to other children.

The presence of fever is a pretty fair indication whether the case is urgent or not. There is no reason why a teacher can not learn, under instruction from a physician or nurse, how to read a clinical thermometer and take the temperatures of children who complain of not feeling well. It should be needless to point out that it is the duty of the teacher to observe absolute cleanliness in using the thermometer.

In general, note cleanliness of face, nose, hands, and clothes and the care of the hair. Do not criticize a child for uncleanliness, at least publicly; instead, call attention to the cleanliness of other children in the point noted. Teach cleanliness of person, clothes, and surroundings, not because of the mistaken notion that dirt breeds disease, but because of the fact that children who have clean habits with reference to *visible dirt* can so much more easily be taught habits of cleanliness with reference to *invisible dirt*, the real cause of infectious diseases.

(3) *Class Work*

Placing chairs at the tables. There is always danger of droplet infection from unguarded coughing or sneezing when children are working or playing very near each other. It is therefore unwise to place the chairs too close together or directly opposite each other. Teach the children how to guard their neighbors when they cough or sneeze, and tell them the reasons why it is important to do this. Coughing or sneezing indoors should be guarded by the use of a handkerchief. Point out that the handkerchief may be a protection to others by shielding them from germs thrown

off from the respiratory tract (nose, throat, bronchial tubes, and lungs), or it may be a danger to them by acting as the means for transferring disease germs to them.[1] If a child with a cold uses his handkerchief to wipe the nose of another child, or to dry the tears, not infrequently a cold will develop or sore eyes will result. Explain that the head should be lowered if one has to cough or sneeze without a handkerchief. It is not a very good plan for a person with a cold to protect a cough or a sneeze with the hand unless he washes his hands at once. His hand may be instrumental in passing the disease on, as it comes in contact with another person's hands or with something which other people touch.

Why is the winter called the season of bad manners?

Use of separate materials. As far as practicable, let each child have separate material — blocks, pegs, crayons, pencils, etc. Discuss with the class the reasons for providing individual material. Discuss also why blunt scissors are used. Why is it unwise for children to put pencils into their mouths? Squirrels sharpen their teeth on wood; do children need to?

Impress upon the children the danger of disease if they use their mouths as "pockets" to hold money and other things that have been handled recently, or their lips as "fingers" to hold pencils. Emphasize the fact that infected fingers are one of the chief

[1] A recent investigator of disease transmission has suggested that it might be advisable to have one side of the handkerchief conspicuously colored so that the person using it would know which side contained his nasal secretions (and sputum, possibly), and could fold and handle the handkerchief in such a way that his fingers would escape infection. The universal habit of shaking hands might well be replaced by some other practice less likely to assist in the transmission of disease germs.

causes of disease. Point out that the fingers may look clean and yet have disease germs on them. Teach the slogan, "Watch and wash your hands."

Posture in sitting and standing. Use the example of the soldier. Emphasize as an objective the resultant gain in height and appearance from standing straight. Have the pupils try breathing when bending forward and when standing erect.

Use of the right hand. Discourage special use of the left hand. It is always more desirable for a person to be skillful in the use of the right hand. This is true in working with machinery, and it is especially true in surgery and dentistry. Remember, however, that some left-handed children will never become proficient with the right hand, and strongly left-handed children should be allowed to develop skill with the left hand. Do not persist in requiring the use of the right hand if results are not easily forthcoming.

Sandbox. Consider the advisability of suspending the use of the sandbox during the catarrhal season and when any diseases are prevalent. There is some danger of spreading disease through infection from the hands of children in the early stage of disease, when no symptoms have developed to put teacher and parents on guard. Then, too, healthy children may serve as carriers of infectious diseases. This is notably true in case of diphtheria germs.

Story telling. The story telling period offers an excellent opportunity for teaching hygiene in a most interesting way. The hygiene stories may be illustrated by simple cartoons on the board, or by pictures, objects, etc.

Songs. There are many songs that indirectly teach lessons in health. Almost any of the music books for use in the kindergarten have such songs as *The Story of Bread, Washing and Ironing, Busy Carpenters, Rainy Day, Good Morning,* and many others that can be intimately related to the child's health.

(4) *Luncheon*

Hygiene of mealtime. Luncheon time presents an opportunity to make suggestions that can be put into practice at once. Have the children wash their hands before eating. Explain that it is more important to wash the hands for the purpose of removing the "invisible disease dirt" than for removing the "visible play dirt." Point out the importance of having individual towels. A towel used by another person is not necessarily disease-free, even though it may appear to be dirt-free. Fingers become infected in many ways: sailing boats in the streams or gutters, playing in filth, coming in contact with the secretions from the nose and mouth and with the excretions from the bladder and the bowels, and in a hundred and one other ways.

Give instruction in table manners. Explain the reasons for having an individual plate, knife, fork, spoon, and cup. Give practice in brushing the crumbs off the table, using a crumb tray.

Teach the children that a glass of water should be passed in such a way that the fingers do not touch the drinking edge. Discuss the cleaning of dishes after they have been used. Show that hot water, soap, clean towel, and clean hands are all important factors in the proper washing of dishes.

Food. Mention the importance of chewing the food thoroughly. Chewing need not be carried to the point of absurdity, but the food should be chewed enough for the saliva to mix with it thoroughly and for the stomach to get ready for its work. Teeth need exercise — make them "dance" by chewing food a proper length of time and by giving them food which needs to be chewed, as toast, for example. Point out the nutritive importance of good blood supply to the teeth.

Discuss the reasons why food is necessary. Foods have building, heating, and regulating properties. Call especial attention to the importance of the "protective foods," such as milk, eggs, green vegetables, fruits, and tomatoes. Children ought to consume a quart of milk daily; they ought to eat an egg a day if it is possible. Disease germs also need food. They are more particular about their food than children. Some of them need human food — the secretions and fluids of the body.

(B) CONVERSATION

The teacher will find many opportunities for incidental health instruction in the conversation periods. Usually the teacher and class talk at some time in the year about how the children get ready for school in the morning, about household work, and about the various trades and occupations that the children are interested in. It is not the intention to suggest that the topics which appear in the following pages shall be introduced for the purpose of giving set lessons in hygiene; but as the children play house or play store or talk of what they do at home, the discussion can be

given a health slant. Here, again, no outline to be followed in detail can be laid down for a kindergarten class. The teacher is asked to read the following pages, weighing the suggestions carefully, and then to discuss them with the children at the time which, in her judgment, is most opportune.

(1) *Morning Routine*

The morning bath. Discuss washing the face, eyes, and hands and combing the hair. The children need to be told that in winter it is important to dry the skin thoroughly, in order to avoid chapping. Cheap soap is perhaps the most frequent cause of chapping. Speak of the importance of washing the hair frequently enough to keep it clean and healthy. Warn the children to dry the hair thoroughly before going outdoors in the winter; there is some danger of catching cold as a result of the chilling of the head. Explain, however, that people do not catch cold through the head or through the chest, but through the nose; in other words, the germs that cause cold enter through the nose and grow there; if the physical condition of the individual is below par, they get a good chance to grow and may cause a bad cold.[1]

[1] As a rule the physical condition of the individual has little to do with avoiding infectious diseases; general good health confers no immunity from typhoid fever or smallpox, for instance. But in the case of respiratory diseases, as colds, pneumonia, and tuberculosis, health seems to be an important factor in prevention. In general, it may be said that good health is of importance in all diseases where the development of the disease is slow and the body has time to rally its forces against the invaders; in diseases where the initial attack is sudden and the disease develops quickly, natural or acquired immunity to that particular disease seems to be the only certain safeguard.

Teach the children the great importance of washing and drying their hands after going to the toilet. While it is true that ordinary washing of the hands will not make them surgically clean, yet it certainly minimizes the danger of passing disease germs on to another person, by greatly decreasing the number that may be on the hands.

Point out also that the face should be washed for the sake of appearance and decency. Bring out the fact that the towel is intended to be used for only one purpose—to dry with. Unfortunately, many children use it to wipe off the dirt from their partly washed hands and faces. Speak of the reasons for the use of paper towels in public places.

Attention may well be called to the appearance of the hair. Make it a matter of personal pride with the children to be independent about the combing of their hair. Mention the importance of having a comb and brush of one's own. *The Story of the Snarlies*[1] teaches a vivid lesson to children who are careless about the use of the comb and brush.

Discuss taking baths. Point out that it is a matter of self-respect, if not a health measure, to take a full bath regularly and frequently. Besides, baths train the skin to stand exposure to cold and serve as either a tonic or a sedative, depending upon the temperature of the water. Explain to the children why they should clean the bath tub after using it; make this a part of the general helpfulness at home in which the children are to be encouraged whenever possible.

[1] In *Oral Lesson Book in Hygiene.* For authors and publishers of all books referred to, see the general bibliography beginning on page 208.

The teeth. Speak of the importance of brushing the teeth after every meal and before going to bed at night. Have the class go through a pantomime tooth-brush drill. Teeth are the most valuable of "pearls."

Most children of the kindergarten age understand what the teeth are for; some know about first and second teeth. The getting and losing of teeth constitutes to children a series of dramatic incidents; it is a subject they are interested in. Tell them how many teeth they ought to have in the first set; they will remember without difficulty if told that they have in each set, upper and lower, as many teeth as they have fingers.

Ask whether any of them have not cut all their first teeth. (Usually all the first teeth are through by the time a child is three years old.) Tell them that the "baby" teeth work for them while the jaw is still too small to hold all the teeth that they will need when they are grown up. They must try to keep the first teeth as long as they can, so that their food will always be chewed properly.[1]

Another reason for keeping the baby teeth in place as long as possible is that they act as pathfinders for the second teeth. When a first tooth is lost before the second one is ready to come through, the jaw shrinks a little, and then there is not quite enough space for the second tooth to come in without crowding. Thus it is very important to keep the teeth clean so that they will not decay and have to be pulled out. If a cavity

[1] Not infrequently, when first teeth are extracted the second teeth erupt prematurely, before they have become properly hardened. Such teeth are liable to early decay because they have not been properly nourished and developed.

comes in a tooth, the thing to do is to go to a dentist at once, while the cavity is small, and have it filled. Endeavor to overcome the fear of the dentist which many children have; impress upon them that it doesn't hurt to have small cavities filled.

The first permanent molars do not usually appear until the sixth year; but there may be some children in the class whose teeth come in ahead of time or who are slightly over age for the kindergarten. It is therefore well to mention the sixth year molars. Tell the children that these teeth usually come through the gums when a child is six years old and that each of them is the sixth tooth, counting from the center. It is important to take especially good care of these teeth, because they are the first of the teeth that the child will have to use all his life. Also, they decay more easily than some other teeth, because they have rather big crevices on the surface, in which food is likely to lodge. Tell the children that when they can count around with their tongues from the first tooth in the center and find a sixth tooth at the end of the row, they will know that the first of their second teeth has come through, and they must be sure to take good care of that tooth, for if it has to be taken out, no other will ever grow in its place.[1]

It is well to warn the children against biting hard candies or trying to crack nuts with their teeth.

Breakfast. Talk about how much pleasanter it is to have the family ready for breakfast on time and to have everybody come to the table clean and properly

[1] The teacher will find helpful suggestions on this subject in Ferguson's *A Child's Book of the Teeth*, pages 18–29.

dressed, with hair combed. Mother has to get up early to have the breakfast ready; surely the children can do their share to help, which with the younger ones means being ready on time and properly dressed.

Speak of what constitutes a good breakfast — stewed or ripe fruit, cereal and milk, soft boiled egg, bread and butter, milk or cocoa to drink. Bread should be at least a day old or else toasted. Water may be taken freely with the meal if there is any desire for it. Digestion can not take place without liquid. Properly taken — in small amounts and between swallows of food — water is a splendid aid to digestion. Suggest the idea that coffee acts like a whip on the body; lazy horses sometimes seem to need a whip to make them go, but colts (children) do not.

Going to school. Discuss the kinds of clothing required for the different seasons. Talk about the need for wearing rubbers in wet weather, and about the times when mittens, muffler, ear protectors, heavy underwear, and an overcoat should be worn. Except in unusually severe weather, it is better for children to go without a muffler. It is entirely possible to train the skin so that a muffler is not needed. Illustrate by telling what the Indian chief said when a tenderfoot asked him how he managed to escape taking cold with so little clothing: "Me all face." The skin can be trained to stand the weather just as the face does.

It is more rational to increase the amount of clothing needed during cold weather by putting it on the outside, instead of by adding constantly to the weight of the underwear. If the first is done, the extra clothing can be taken off when the body becomes too warm;

obviously this can not be done at all conveniently if the increased weight of clothing is put on underneath.

Discuss the danger of crossing streets where the traffic is heavy, playing in the streets, stealing rides on ice carts and other wagons. Children who go barefoot need to be cautious on account of the danger from stepping on nails, glass, or sharp pieces of wood. Any cuts should be bandaged with a clean cloth, and penetrating wounds due to injuries received about a barn or in the street should have medical attention, because of the danger of lockjaw. The "salt pork dressing" common in rural regions is a poor makeshift for medical aid.

(2) *Mother's Duties*

How children can help. Talk of what the children's mothers do to keep the house clean and healthful and have everything neat and comfortable. Ask how the children can help. Bring out the fact that while they can not perform many tasks, there is a great deal that they can do to lighten the work for their mothers. To put away their own belongings, to pick up what they drop on the floor, to refrain from leaving bits of food about, to be careful about tracking in dust and mud, to remember to close screen doors, — all this helps to keep the house clean and therefore more healthful.

Work in the kitchen. Speak of the clearing of the table after the meal; food left about either on the table or on the floor, or uncovered on the shelf, attracts flies, other insects, and mice. Speak of the proper care of waste foods — burning in the stove or temporary disposal in the garbage can. Point out that flies lay

their eggs in garbage if given the opportunity, and that this is one of the most important reasons for keeping the garbage can carefully covered.

Speak of the great care that must be taken to prevent the decay of perishable foods, such as meat, milk, butter, and eggs. It is by keeping these foods cool that we can keep them in condition to eat. Germs are always present in foods, and they begin to increase in number the moment the temperature is suitable. The temperature in an ice box is not suitable for their growth. Milk must be kept cool to prevent early souring and the development of germs which cause intestinal troubles, especially in children. Poor milk is one of the causes of much intestinal trouble among children, especially in the summer.

Talk about washing the dishes; it is important that hot water, soap, clean towel, and clean hands be employed. Even after these precautions have been taken, access of flies to the pantry or dish shelf may result in pollution of the dishes.[1] Keeping dishes clean is as important as making them clean.

Methods of sweeping the floor may be talked of; that is, with the use of considerable muscle but little intelligence, or carefully, so that the amount of dust raised is negligible from the standpoint of health.

The danger of fire may also be mentioned. Clothes should not be placed too near the stove to dry. Matches of the safety type should be used; if others are used, they should be kept in a tin box.

[1] Rosenau says: "When the matter is generally understood, it will be a greater reproach to the housewife to have mosquitoes and flies in the house than to have bedbugs."

The sleeping room. How many windows are there in the room? Does the sun shine in, and how many hours? Are the windows open during the day and night? Explain that ventilation is especially important in the sleeping room because one spends so many hours there. A room is not properly ventilated unless the air circulates, is reasonably cool, and has a normal amount of moisture.[1] It is necessary for the body to keep its temperature at a constant level, and this it can not do in poorly ventilated rooms. If the weather is such that the room can not be ventilated from the outside, it should be ventilated from the inside. Where opportunity allows, there should be a place for air to get *out* as well as a place for it to come *in*. Bees are said to ventilate their hives by keeping their wings moving like a fan; use this fact to show that ventilation is important.

How many hours do the children sleep? Explain that sleep is the time for growth; plants grow more during the night.

Talk of the reasons for changing the clothing at night; tell the children to turn their clothing inside out and notice what happens when the clothes are shaken; explain that the dust is mostly dead skin. In talking about bathing the body frequently enough to remove all dead skin, dirt, and oily material from the glands of the skin, mention the fact that a snake changes its whole skin. Interest in the habit of arranging the clothes in order

[1] Recent studies have shown that the depressing effect of poorly ventilated rooms is due largely to the effect of the warm, moist, sluggish air on the skin. Such air, even with its oxygen decreased and its carbon dioxid increased, can be made temporarily refreshing by the use of an electric fan.

at night may be stimulated by telling how the firemen arrange their clothes at night so that they can get them instantly. Ask the question, "How many of you could find your clothes quickly in case of fire?"

The living room. Have the children tell about sweeping day at home. Explain that where possible the rugs are taken outdoors, or the windows are thrown wide open and care is taken to raise as little dust as possible. The use of a carpet sweeper or a vacuum cleaner makes it less necessary to take rugs outdoors for a cleaning. Contrast the two kinds of dusting — dry dusting and damp dusting, or the use of an oiled cloth. Ask who makes most of the dirty finger marks on the woodwork; suggest that children can be helpful by keeping the hands clean so that they do not mark the woodwork and do not leave dirt on things that many other people must touch, as door knobs and banisters.

Hallway and stairs. What is said about the hallway and stairs will depend a good deal on the home conditions of the children. The care of a hall in a house where only one family lives is quite a different matter from the care of a hallway in a crowded tenement house. Hallways should always be well lighted, and this is especially true in tenements, as it is in the hallways that disease germs are first deposited from the shoes when people enter the building. Then, too, in tenement houses the hallway is more or less public property, and many persons take no interest in keeping it even presentably clean. Cigarettes are thrown into the corners and not infrequently sputum is scattered in the passages and on the steps. Conditions such

as these sometimes favor the existence of germs for a short time after they have left the body, although there is no denying the fact that disease germs need human soil to multiply in. The sputum in which they are scattered serves as soil for them for a time, as it is moist; and if the hallway is dark, germs may live for a short time. Impress the children with the fact that dark places in the house need the light of day; they should be exposed to the sun and scrubbed with hot water and lye, for germs, figuratively speaking, play hide-and-seek in dark places and fear more than anything else that they will be discovered and given a sunbath. (These same principles, of course, may be applied to public buildings such as schools, theaters, railroad stations, etc.)

The children must understand that disease is often due to carelessness in putting the fingers into the mouth. Call attention to the number of hands that touch hand rails and door knobs, and explain that there is always a possibility that some one with an infectious disease has just smeared germs over them. This possibility should not make us afraid to touch such articles — it is impossible to escape all hand contamination — but it should make every one remember to keep his fingers out of his mouth and nose and to wash his hands well with water and soap before handling food.[1]

Show that rubbish constitutes a fire danger; some

[1] Recent studies of the antiseptic and germicidal properties of medicated soaps have led to the conclusion that the cleansing properties of a soap are more valuable than its antiseptic or its germicidal properties. The soap solutions obtained in hand washing were found to have no practical germicidal or antiseptic value. It was also determined that soap left on the hands after washing possessed no germicidal action.

one may thoughtlessly throw into it a lighted cigar or cigarette or perhaps the smoldering end of a match.

Another reason for keeping the stairs in good condition is that accidents may be due to slipping on wet steps, or stepping on spittle or fruit skins, etc.

(3) *Father's Duties*

Health and strength for work. Father provides food, clothing, and shelter for the family. Show that health is of great importance in his work. Point out that the proper time to lay the foundation for health is in youth. It must be remembered, however, that the child has but little interest in health as an asset for the future; he does not look ahead far enough for that. To him health must be made desirable because it means happiness, strength, skill in play, and admiration by others.

Discuss father's duties about the home: looking after the fires, clearing away the snow, bringing up the coal, cutting wood, carrying ashes, mowing the lawn, etc. Point out that the things he does to help at home often require considerable strength. Suggest that when the children get old enough and strong enough, they will wish to help their parents, as far as their strength will let them, by running errands and helping about the house.

(4) *Trades and Occupations*

Children delight in discussing occupations and in telling what they will do for a living when they are grown up. The teacher can often take occasion to mention health points in connection with talks on

occupations. Some of the particular trades that lend themselves to such instruction are noted here.

The grocer. Make an imaginary visit to the grocer's. Bring out the fact that in good stores bread is usually wrapped in clean waxed paper, butter is kept in cartons, candy is kept under glass, berries are often kept under netting, meat and milk are kept on ice, and every reasonable effort is made to prevent the food from being contaminated through handling or coughing, or by insects. Point out that two kinds of food especially need protection. The first is food that is neither washed nor cooked before it is eaten (as bread, cake, crackers). It is not so important, for instance, to have the rice in a store covered as it is to have bread covered, for the rice will be both washed and cooked before it comes on the table. Remind the children that cooking kills any germs that may be in the food. The other foods that need special protection are those that spoil quickly, as milk.

Have the pupils tell what they know about different foods — such as milk, cereals, eggs, fruit, vegetables, meat, fish — and their food values.

Discuss the question of candy eating. It must be recognized that the attitude of nutrition experts toward candy in the diet of children has changed considerably. Candy is now recognized to be of high food value and a valuable article in the diet of children. It should be pure candy and should be eaten after meals; in reasonable amounts it may even be allowed between meals. It is not certain that candy is particularly instrumental in causing dental decay; it has been observed that children who eat a great deal of sugar cane often have

excellent teeth. Dental decay depends on other factors besides sugar, such as poor nutrition of the body and teeth, an acid condition of the mouth resulting from bacterial action, and poor oral hygiene.

The milkman. Speak of the great food value of good milk and its importance in the diet of children. Explain the relation of "sick cow, poor milk, sick child." Tell the children something about the great dairies and the scrupulous cleanliness observed in them.

Good milk depends principally on three factors — the cow, the milkman, and the people who take charge of the milk after it is delivered.

Everything connected with the process of milking should be clean. This means that the barn should be sanitary, the cows should be clean, the milkman's hands should be scrupulously washed, and the pail should be scalded and dried before it is used. Milk is an excellent culture medium for germs, and every precaution should be taken to keep them out, especially the germs of infectious diseases. With the exception of tuberculosis and foot-and-mouth disease, the diseases which come from the infection of milk are due to the milkman, who may pollute the milk with his hands or may let it become infected by putting it into polluted pails and bottles. After the milk is delivered it may become infected if people do not take proper care of it. Milk keeps better when the cap is replaced on the bottle or an inverted glass is placed over the top. It should be kept cold. Bottles and pitchers should be clean.

Explain that the souring of milk is due to the action

of germs, but these germs are not disease germs. Germs are like human beings in that some are good citizens of the world, others are more or less neutral, while others are distinctly criminal and harmful in their actions. Germs that sour milk can not cause specific diseases in human beings; but as a result of their activity they may cause intestinal trouble.[1]

Emphasize the value of milk as a food; children usually think of it as a drink. Milk makes children grow; tea and coffee do not. Ice cream, when made with pure milk or cream, is a good food.

The huckster. Discuss the food value of vegetables and fruit, tomatoes and oranges especially. Children, like grown persons, need to eat potatoes, carrots, corn, tomatoes, spinach, celery, lettuce, beans, beets, etc. Make the point that cooked vegetables must be well cooked; vegetables eaten raw must first be well washed. Tell the children that the potato and the tobacco plant belong to the same family. Ask which one is the black sheep.

Fruit is very important in the diet of the child. Only ripe fruit should be eaten uncooked. Baked apples, stewed prunes, raisins, baked bananas, figs, oranges, — all are good. Emphasize the importance of learning to eat every kind of good food. Discourage the notion that there is something rather clever in taking a dislike to a particular food and refusing to eat it.

Point out the importance of having vegetables and fruit fresh and clean. Name some of the different ways

[1] While there are many persons who believe that sour milk is healthful to drink, the safer practice is to give only fresh milk to children. The condition that favors the activity of milk-souring germs also favors the activity of any disease-producing germs that happen to be present.

in which fruit may become unclean, as from handling, pollution from flies, droplet infection (coughing, sneezing, or spitting).

Explain briefly the cause of fruit decay. Fruits are protected by a skin which, if unbroken, prevents the entrance of decay germs. Once the skin is broken, decay germs enter and begin to multiply, just as disease germs enter the human body through the nose and mouth and occasionally through the broken skin and begin to multiply in the body. From a discussion of fruit decay, lead up to the consideration of dental decay. The important thing for the child of this age to know is that his best chance of preserving his teeth is to eat nourishing food and to brush his teeth regularly, after each meal if reasonably convenient and always before going to bed.

Other occupations. Lessons may be drawn from the work of the iceman, garbage collector, street cleaner, coalman, ash collector, farmer, miner, factory worker, etc.

(5) *Health and Sickness*

The attitude toward health. It is very desirable that the teacher emphasize the value of good health and point out that it is much easier to keep healthy (especially from the standpoint of the non-infectious diseases such as result from poor physiology) than it is to gain health. This principle applies also to the infectious diseases. Prevention has always been better than cure.

Implant in the children's minds the idea that when they get sick they can do much to help themselves

toward health by coöperating cheerfully in whatever measures are necessary.

Select some boy or girl who is well and strong as an example and discuss: expression (happy), color (red), muscles (strong), skin (clear), posture (erect), courage (good), school attendance (regular).

Emphasize the importance of a child's telling his parents when he feels sick. The earlier the cure begins, the shorter the duration of the sickness. Show that the child who neglects to observe the simple rules of health does not deserve the friendship of other children, in whom he may cause sickness through his carelessness.[1]

The doctor. The teacher should make it her duty to develop the pupils' confidence in their family doctor and in the school health inspector; too often children fear the doctor and handicap him in his work. It is a mistake for parents to use the threat of calling the doctor to give medicine as a means of securing obedience. Ask how many have had a doctor. Let the children describe the doctor. Stimulate an interest in discussing what the doctor did when he entered the sickroom.

Explain that the doctor believes in fresh air and sunshine in the sickroom. One of the reasons why the

[1] The teacher should use all her influence to impress upon the children and their parents the absurdity of the mistaken notion that children may as well be exposed to the infectious diseases because the children are bound to have them sometime, and diseases are less serious in childhood. No child is ordained to suffer from infectious disease, and careful attention to early symptoms will result in the escape of many children who would otherwise contract disease and suffer pain, permanent injury not infrequently, and even death.

doctor himself usually escapes disease is because he is careful to wash his hands after touching sick people and before he eats. Ask why the doctor is not always getting sick from being with diseased people who are coughing and sneezing continually. Explain that he turns his head aside to avoid the germs that are sprayed into the air.

What does a doctor prescribe for a sore throat? How many of the children can gargle?

The sickroom. Fresh air and sunshine are needed in the sickroom. Teach that sunshine makes green plants grow and helps to make sick children strong. "Where the sun goes but seldom, the doctor goes often." Explain. Is it advisable to kiss a sick person? Why not? Why is it necessary to keep quiet when a person is sick in the house? Explain the importance of rest and sleep.

Why does the doctor order a child to have clean clothes and a bath before he allows the child to return to school after an attack of measles? Why must the bedroom be well aired and cleaned after some one has been sick with an infectious disease? Explain this statement: "A little cold in a big man may cause a big cold in a little man (child)."

The nurse. If the school employs the services of a school nurse, have some one describe the nurse's uniform. Tell why she wears this particular uniform. If there is no school nurse, the teacher may tell briefly what the school nurse does in places where work of this kind is carried on.[1] Discuss how the nurse avoids catching diseases from the children under her care.

[1] The nurse acts as assistant to the school physician and follows up the different cases which the physician discovers in his examinations and the

Tell briefly something about the work of the Red Cross nurses during the World War. Point out that they serve the country in time of disaster of any kind if their services are needed.[1]

(c) PERSONAL HABITS

Personal habits to be discouraged. Some personal habits to be encouraged, such as those connected with personal cleanliness and care in guarding against spreading disease germs when coughing or sneezing, have been mentioned a number of times in the preceding pages. Mention may be made also of certain habits common among children that teachers have always discouraged as a matter of teaching the children good manners. It has not always been appreciated, perhaps, that these habits are objectionable from the standpoint of health also.

Insist on the use of the handkerchief rather than the fingers or the sleeve to wipe the nose. Discourage

cases reported to her by the teacher. Frequently the nurse visits the parents of the sick child to be certain that they realize the condition of their child. Glasses may be needed; perhaps a discharging ear needs attention; there may be adenoids requiring operation; or the child may have diseased tonsils that are serving as factories where disease germs manufacture poisons that enter the system of the child. Correction of physical defects must be attended to. If the child's weight is below average (see the standard weight scale on page 206), the nurse explains to the parents what foods must be given to bring the child to normal weight. Proper ventilation of the sleeping chamber is always emphasized in these cases.

[1] The American Red Cross is doing splendid work in the schools, where a health campaign is being carried on. Part of its work is concerned with the organization of Modern Health Crusaders. Bulletins describing this work may be obtained by writing to the American Red Cross, Washington, D. C.

the practice of "picking" the nose. A child who habitually picks his nose may have catarrh; report him to the doctor. Emphasize the fact that you do not like to touch the hands of children who pick their noses or to have them touch you. This practice may make the nostrils large, and it may injure the membrane that lines the nose. Draw a picture to illustrate, and exaggerate the size of the nose.

Biting the nails is another objectionable habit. Explain that this habit may result in sickness as well as in unsightly finger nails. There are two kinds of dirty nails that are dangerous — those in old boards and those on dirty fingers.

Putting the fingers into the mouth is likewise an objectionable practice. Remind the children that the water in the wash basin is dirty after the hands have been washed; dirt comes off the fingers when they are placed in the wet mouth, just as it comes off in the wash basin. If the practice continues, suggest that you may need to look at the tongues to see if any one has been using his tongue for a towel.

The habit of putting pencils into the mouth can be overcome in part by using pencils with a soft lead. Junior health officers may be appointed from among the pupils to help check this habit. In Holyoke, Massachusetts, the experiment was tried of dipping the pencils used by the pupils in a solution of sulpho-naphthol for a short time each day. Pupils were cautioned not to place the pencils in their mouths. Those who forgot the admonition found the taste so unpleasant that they did not care to continue the habit. The children were so impressed by the ceremony of having their

pencils sterilized that the habit of putting pencils into their mouths was broken. Pencils used for several weeks thereafter showed hardly a tooth mark. The solution used was comparatively weak, and no possible danger could come from getting it into the mouth. Its efficacy depended largely on the fact that it was a medicine and had a disagreeable odor and taste.

Putting coins and other foreign bodies into the mouth is unhygienic and dangerous. Babies put things into their mouths to bite on so that their teeth will come through. Are there any "babies" in this class?

(D) PHYSICAL EDUCATION[1]

Children are essentially little animals. Play is natural to them; study is not. These statements hardly need to be made to teachers in the kindergarten, because here more than anywhere else in the child's school life play is allowed to take its natural place in his education. In the upper grades, however, it is only some of the unusually progressive school systems that have given more than scant attention to the value of play in connection with the training of the child. The truth of Montaigne's statement, "We have not to build up a body nor a soul, but a human being, and we can not divide him," seems to have been lost sight of. Children's physical selves have been left, figuratively speaking, sitting on the playground fence at the ringing of the school bell, while their mental selves marched inside to sit at the desks and study. This is all chang-

[1] All teachers in rural schools should have a copy of *Recreation and Rural Health*, Teacher's Leaflet No. 7, Department of the Interior, Bureau of Education, Washington, D. C.

ing, fortunately, and there are now eighteen states that have state physical education laws by which a definite amount of organized play is required, as well as careful health examinations, morning health inspections in the classrooms, intelligent follow-up work by trained nurses, regular and persistent instruction in health and the hygienic obligations of individuals to society, and a certain amount of systematic physical exercise. Play as well as play time is well on the road toward receiving the attention that it merits.

It must be borne in mind that organized play serves other purposes than the development of physical vigor and efficiency. It is important for the teacher to appreciate the educational, social, and moral values of directed and organized physical exercise as well as the physical value. " Children play to live and learn."

Some of the ways in which the physical interests of the kindergarten child may be served in his school work are suggested here:

(1) The use of dramatized Mother Goose rhymes. Such rhymes as " Jack be nimble, Jack be quick, Jack jump over a candlestick," and " Hickory dickory dock, the mouse ran up the clock," may easily be dramatized and acted out in such a way that both the child's mimetic and his physical interests are served.

(2) Rhythm training. It is hardly necessary to call attention to the value of rhythm training. This should be given without music as well as with it, and also with the rhythm of the music changed from time to time.

(3) Rest periods. Opportunity for relaxation, muscular and mental.

(4) Dramatized stories. These may be devised to teach lessons in hygiene or to make imaginary application of the principles. The following is an example:

Sweeping Day

1. Open the windows, pushing them up high. (Children imitate the teacher, who opens as many windows as practicable. Teacher explains why it is advisable to open the windows. If one stirs up the mud in a puddle, the same mud gradually settles to the bottom again; if one stirs up the bed of a stream, the sediment is carried along by the current. By ventilating, a current is set up in the room to carry off some of the dust thrown in the air.)
2. Roll up the rugs. (Bending over and walking forward a few steps.)
3. Lift rugs to shoulders and carry them outdoors. (March around the room.)
4. Beat the rugs. (Kneel and swing stick first in the right hand, and then in the left, turning the head to avoid the dust.)
5. Sweep. (First to right, then to left.)
6. Return indoors and sweep. (Less muscle — more care.)
7. Reach high to dust pictures and knock down cobwebs.
8. Dust furniture. (Use oiled cloth.)
9. Deep breathing to get the dust out of the lungs. (Step to windows.)
10. Bring rugs in and put them in place. (Marching around the chairs.)
11. Close windows and take seats.

FIRST YEAR

General Suggestions

The teacher is urged to read the section on work for the kindergarten (pages 1 to 41); many of the suggestions are equally applicable in the first grade.

Health clubs. Some form of class organization for practical instruction in hygiene is desirable.[1] In schools where health inspection is well organized, the visiting physician and the nurse can be of great assistance in organizing a health club. While their help will be of value, chiefly in stimulating the pupil's interest in health problems, an enthusiastic teacher can effect a very satisfactory organization without it. The purpose of the club may be suggested in its name, as "Keep-well Club."

Health records. It is often helpful to have a chart on the blackboard or a notebook hung in a conspicuous place, containing the health and sickness record of each pupil and a daily health record of the class, kept by the teacher. A record of height and weight is always interesting to the children, and it serves to stimulate interest in correct posture and to encourage good health habits in eating and sleeping. Children should gain about half a pound each month. The teacher and the visiting physician may give honor stars (gold paper stars for the pupil's health record, or yellow chalk stars placed opposite the pupil's name on the board).

[1] Valuable suggestions for school organizations will be found in *Teaching Health*, United States Bureau of Education, and *A Manual for Modern Health Crusaders*, the American Red Cross, Washington, D. C.

Are you expected to enforce any regulation regarding health certificates from each pupil, including a vaccination certificate? Have all parents been notified? Have you called the attention of the school physician or the nurse to children who have not presented health certificates? Have you examined the certificates so that you know about the health of each child? Have you filed these certificates for future reference in case of infectious disease or unexplained deficiency in school work?

Chalk talks. Chalk talks illustrating simple facts of hygiene, to be given by the teacher, or by the physician if he has time, will be found valuable. If these talks are given in an interesting way, pupils will take pleasure in copying the cartoons and carrying the lessons home to their parents. It is not necessary that the cartoons shall be well drawn; the essential thing is to make them very simple, for children can not copy them unless they are simple. The physical director and the school nurse can be of great help in connection with the chalk talk plan, because their visits are always a welcome event in the program of the day. Talks on the care of the teeth, the avoidance of accidents, the importance of clean hands, and other related topics, offer excellent opportunity to teach effective lessons. *Oral Lesson Book in Hygiene*, *A Child's Book of the Teeth*, and *The Adventures of the Starch Family* give valuable suggestions on the use of cartoons.[1] Many of the hygiene readers for the elementary grades have pictures that can be adapted to this grade.

[1] For authors and publishers of all books referred to, see the general bibliography beginning on page 208.

The cartoons are most successful when they remain on the board for a week or so, and are then changed by additions here or erasures there, so that the lesson and the picture are developed together. The drawing teacher can be of great assistance in this work, either by suggesting simple pictures for the hygiene lessons, or by using the field of hygiene as a source for some of her work in the drawing class. Pupils coöperate readily in work of this kind, and the use of the picture (cartoon) method lays a good foundation for the more formal study of hygiene in the upper grades.

On page 47 a sample chalk talk is given, as a suggestion for the use of this method.

Reading. It is strongly recommended that the teacher devote some time each week to reading to the class from such books as *The King and his Wonderful Castle* and *Yourself and the House Wonderful.*

The basis for health work in this grade. Since good personal habits are best formed at this age, the importance and desirability of cleanliness should be taught in an unobtrusive way. Lessons have been so arranged in this grade that attention to personal hygiene becomes the dominant thought. A definite plan has been included for instruction concerning the prevention of accidents common to childhood. Care needs to be taken not to force the advice or caution as a lesson to be learned and then recited as such; it should be given to the pupil indirectly, as an incident to some subject of common interest to all the children. Opportunities for this kind of indirect instruction are continually presenting themselves, not only in the hygiene period, but in other subjects as well. Every lesson in

the program of the day contains possibilities for teaching the laws of good health, and it is only when these opportunities are rightly appreciated and made use of, that health ceases to be an isolated subject to be studied at a given time and then forgotten until the next day. Only by associating hygiene — indirectly and unobtrusively — with every other topic, can the teacher hope to make the subject a living thing.

Alcohol. Pupils in the first grade are old enough to be taught something about alcohol. The average child knows about cider or beer, which makes it easy to approach the study of alcohol from that topic. It will be sufficient for children to know that cider and beer contain a poison called alcohol, which makes people intoxicated if they drink a sufficient amount. They may be told the story of how butterflies in South America sometimes get drunk if they are foolish enough to drink the juice from a certain flower which ferments and makes alcohol; the fermented juice makes them unable to fly, and they are killed by their enemies. Fermented juices are poisonous when taken into the body. Appropriate reference to the harmful effect of alcohol may be made as opportunity presents itself.

Tact must be used in discussing this subject, especially among children of foreign-born parents, for some nationalities use alcohol freely on their holidays, and ceremonies are not complete without it.

Tobacco. Children should be familiar with the fact that tobacco contains a poison which is harmful to young people. Tell them that when a farmer wishes to get the honey in a hive, he is able to stupefy the bees

by blowing tobacco smoke into the hive; while the bees are in a stupor they are robbed of their treasure. Cigarettes make boys stupid if they are inhaled in sufficient amount. Grown people stand the poison better, because they have stronger bodies. No child is so foolish as to try to wear his father's shoes in an attempt to imitate grown people.

Care must be taken when teaching about alcohol and tobacco not to make statements that will affect a pupil's confidence in his parents.

A Chalk Talk on the Chain of Health

This story is about a chain. Have any of you seen one of those dancing bears with a chain and ring attached to a muzzle? At any rate, I am sure that some of you have seen a circus and have noticed the huge chain around one of the elephant's feet to keep him from getting away. Chains for such a purpose must be very strong. There can be no weak links.

The chain that I want to tell you about has to be very strong, also. It keeps disease germs away from your bodies. You know enough about germs to understand that we can't tie a chain around their legs, for they have no legs. The chain that I am going to tell you about keeps germs away from you in a different manner. Of course it isn't a real chain. It is a make-believe chain — something that we draw on the board. We call it "The Chain of Health."

This chain is made out of health habits. You little people are to be the blacksmiths who forge the links. You must remember this: if you make a weak link, your chain is liable to break and allow disease germs to attack you. There are six links in this chain. Shall we begin making it now?

Here is our first health link — the "Good Food Link." Who can tell me what kinds of food are needed to make a strong link? Yes — milk and eggs, fruit, vegetables, especially the green leafy ones, bread and butter, meat once a day, and plenty of well-cooked cereals. What are some of the foods that make a weak link? Yes — coffee, tea, fried foods, etc. Remember that your food must be clean, properly cooked, and well chewed. It takes good food to make muscles, and it takes strong muscles to make a strong health chain. So when I print "Good Food" on this link, remember that food is one of the ways in which your body builds up an invisible "Health Chain" to defend you from disease.

The second link in our chain is called the "Fresh Air Link." The body needs fresh air as well as good food. You eat three times a day: you breathe several hundred times a day. Do you remember the story of Rip Van Winkle? He slept for twenty years without eating. But he was breathing all the time: wonderful fresh mountain air with no dust to make him sneeze and no disease germs to make him sick. Of course that is only a story. We have something else to do besides sleep, haven't we? We should get plenty of fresh clean air, however, while we play and work as well as when we sleep. Let me see how you fill your lungs when you breathe. Good. And remember this: — you take more than one or two mouthfuls of food during the day, don't you? Don't you suppose your lungs also get hungry for a deep breath of fresh air very often during the day? Take a deep breath every time you think of it. Do you all promise? Here we have our second link in the "Chain of Health." It is called the "Fresh Air Link."

What shall we use for our third link? I think "Cleanliness" makes a strong health link. Our food, air, drinking water, and bodies should be clean. (Here the teacher may discuss the importance of cleanliness,

especially cleanliness of the hands and mouth.) This link is often the weak part of the chain. (Represent this link as weaker than the other two.) Who can tell me how to make this link stronger? Let me tell you one way. The boy who washes his hands before eating is less liable to get sick than the boy who doesn't. This habit strengthens his "health chain." What are some other ways? (Each time a pupil names a health habit related to cleanliness, draw the link a little heavier.)

I want some material to make our fourth link with. It must be strong. How do you make your muscles strong? That is what I want to make this link out of — Exercise. But you exercise other parts of your body besides muscles. You should exercise your brain (study), your mind (self control), and your muscles (play). You must exercise in all these ways if you expect to have a really strong Health Chain. (Draw fourth link, and label it "Exercise.")

The fifth link is called the "Sleep Link." I fear that it is a link that little folk dislike to forge. I find that little people like to stay up later than they should at night. Don't you realize that you need sleep if you are to grow into men and women? Night is the time when you store up strength for the next day. Growth takes place during the night. You need ten or eleven hours of sleep every night. Fresh air in your sleeping room will help you gain in strength and size. (Add fifth link and print on it, "Sleep.")

We are going to make the final link in our health chain today. So far, the links on the board have all been well made. I hope that they will stand the strain that may be put upon them by disease. But there are other things besides disease that your chain must protect you from. Accidents are as common as disease. Caution makes a very good accident prevention link. So I am going to call this sixth link which joins up all the other links and completes the

health chain, the "Caution Link." Can you suggest ways in which we can make this link strong? (The teacher may employ the plan used in connection with the development of the topic on Cleanliness. Discuss the common accidents and their prevention.)

I have shown you how to make a health chain and how to look after it. If it begins to get weak, you should strengthen it at once. Tell your parents about it; perhaps they can help you. The teacher, the health examiner, and the nurse also will be on guard for signs that your chains are wearing dangerously thin. But you must do your part.

First Year — First Term

Central Topic: *Hygiene in Nature*

First week.	The Usefulness of Animals
Second week.	The Food of Animals
Third week.	Table Manners of Animals
Fourth week.	The Teeth of Animals
Fifth week.	The Tongue
Sixth week.	Overfeeding
Seventh week.	The Animal's Home
Eighth week.	Cleanliness
Ninth week.	Health of Animals
Tenth week.	Accidents to Animals
Eleventh week.	Hygiene of the Feet
Twelfth week.	Hygiene of the Eyes
Thirteenth week.	Hygiene of the Ears
Fourteenth week.	The Nose and Throat
Fifteenth week.	The Child's Health Habits
Sixteenth week.	Play
Seventeenth week.	Review
Eighteenth week.	Review

Health consciousness. It is best to develop health consciousness in the child through informal discussion of his daily activities and interests as well as of his experiences. Children of this age are interested in their pets, birds, the baby at home, playing with dolls, sailing boats, playing soldiers, etc., and the natural approach to the subject of hygiene is through the avenue of these interests.

There are many methods of developing lessons in hygiene from the interests of younger children. One of these methods is outlined below for use in the class, to show the teacher how broad a field of opportunity there is for developing her own plan for the health education

and training of her pupils. The material presented is in no way complete. Neither is it expected that the teacher will use the exact material in all cases, or will necessarily present the material in the way suggested here. Lessons of this kind will prove most successful in the hands of the teacher who will vitalize the instruction with her own personality.

Animal life as an approach to hygiene. The lessons for the first half-year are developed through the informal discussion of pets — the different kinds; how they are useful to humanity; their food, eating manners, teeth, tongue; the effect on animals of overfeeding; their living quarters; hygiene, health, accidents that are common to them; their feet, eyes, ears, nose; their play, etc. The use of such a plan enables the teacher to suggest proper methods of hygiene to the child and to begin his habit training, without having the child realize that he is studying about his own health — a subject that has but little interest to him, because he is healthy.

This work might well be given in connection with the morning health inspection, and some form of class organization could be effected, as suggested on page 43.

Have you read Adams's *The Health Master?*

FIRST WEEK

The usefulness of animals. Ask the names of the different kinds of pets that the children have or know of — dog, cat, rabbit, pigeon, squirrel, lamb, goat, pony, etc. Discuss the different breeds. Name the ways in which dogs are useful: as companions; save life (St. Bernard and Red Cross dog); protect property

(watchdog); assist in catching criminals (police dog, bloodhound); pull loads (Eskimo dog); watch the sheep (shepherd dog); hunt (pointer, hound); catch rats (terrier). It may help in the discussion if some pupil brings a pet to school for the lesson; let different pupils take turns in bringing pets to school if it is convenient to have this done. Interest the child in his pets and in everything that concerns their health; the lessons are certain to react on the child's health habits.

SECOND WEEK

The food of animals. What does the dog eat? What is the usual condition of his food? Point out that the dog's food is frequently raw and dirty; it would be unfit for the human stomach. The dog's meals are irregular, and it is animal nature to eat all there is, because of the uncertainty of the next meal. Point out that there are objections to eating between meals, such as loss of appetite for the regular meal. The stomach muscles get tired like any other muscle unless they are given *regular* rest each day. A furnace receives regular attention; the stomach is the fuel box of the body and also needs intelligent care. The dog, as a rule, does not have stomach trouble; his digestive system is so different from his master's that the same rules do not apply to it. A dog that is fed unwisely may become quite sick, but his stomach is usually prompt in rebelling against any unkindness. Children rarely suffer from chronic stomach trouble, but grown people do when they have abused their stomachs constantly.

Point out the importance of cooking food: cooking kills germs, makes some foods more digestible, makes food easier to chew, improves the taste of it, and makes it more attractive. Point out that the dog naturally exercises longer and harder than children do, and may require more food. Discuss the school luncheon.

Interest the children in the question of food by pointing out that different pets have different kinds of appetites. The dog likes meat, the rabbit likes vegetables, the kitten likes milk, the pigeon likes grains, cracker crumbs, etc., the squirrel likes nuts (do not neglect this opportunity to speak about teeth). Do the children feed the birds in the winter?

You are trying to teach these children habits of health: do you realize that your own health demands the exercise of your intelligence at the dinner table? The stomach is often the first part of the body to suffer from the nervous strain of classroom work.

THIRD WEEK

Table manners of animals. Point out that the dog is greedy, eats his food hastily, makes a noise when eating, is not careful to keep the food in his dish, spills food on the floor, holds his food in his paws; he fails to show a single table manner that could be commended in children. Can you imagine a dog wearing a bib, or using a napkin, or washing his paws before eating a bone? Point out that animals should eat out of their own dishes, which should be reserved for them. The squirrel sits up straight when he eats; does that suggest a lesson to the children?

Make the class understand that the "table man-

ners " of animals are perfectly natural to them and reflect no discredit on them. Civilization has found it advisable and desirable to observe certain customs when eating, and the breeding of a child is often judged accordingly. Good table manners, like other manners, are founded largely on courtesy to others and thought for the welfare of the individual.

Is there a lunchroom in your school? Have you ever visited it to see whether habits are practiced there that will negative much, if not all, that you teach in class about hygiene? Have you tried teaching correct table manners by the pantomime method? Try dramatizing the lunch hour and have different pupils act out the care of the hands before eating, the proper use of the knife and fork, how to pass dishes and cups, the use of the napkin, position at the table. Discuss picking the teeth at the table and other practices that are forbidden at mealtime.

FOURTH WEEK

The teeth of animals. The dog's teeth are long and sharp and clean. Do dogs have toothache? Why not? Explain that the diet and the life of the dog determine whether his teeth decay or not. The dog's toothbrush is the bone that he gnaws. The dog has a sweet breath because his teeth are clean; decayed teeth with decaying food in their cavities resemble little garbage cans in the mouth. The perfect digestion of the dog is another reason for his sweet breath. Speak about the squirrel's teeth. Explain that birds have no teeth. Discuss briefly the way in which the food of birds is " chewed."

Use the pantomime method for teaching how to brush the teeth correctly.[1] Have a demonstration in front of the class with a pupil using a toothbrush, paste, silk floss, and mouth wash.

Do *you* visit your dentist twice a year for examination? If it is worth while to teach oral hygiene, it is surely worth while to practice it.

FIFTH WEEK

The tongue. Facts of interest about the dog's tongue — long and rough. Why? The dog's tongue is usually clean; it is rarely coated, as are children's tongues when they are sick. The dog is able to make a spoon of his tongue for use when drinking. Point out that the bowl of a spoon should not be touched by the fingers when picking it up. Dogs cool off by panting (the blood is cooled as it circulates through the lungs and comes in contact with the cool inhaled air): children cool off by perspiring. Point out that children need body baths to remove the material that comes

[1] The teacher should provide a brush, toothpaste (or powder), dental floss, cup of water, and basin. Question the class as to the proper way to use the brush. Point out that the teeth should not be brushed across but rather up and down. Brushing across the teeth tends to wear the tooth away at the neck (the part of the tooth nearest the gum), and it also is liable to injure the gum. Not only that, but it may make the gums recede, which is a most undesirable result. In demonstrating the toothbrush drill, teach the class to brush the outside surfaces first, following this order: upper outside surface of teeth, right, front, and left side of jaw; upper inside surface, right, front, and left side; lower outside surface of teeth, right, front, and left side; lower inside surface, right, front, and left. The chewing surfaces of the teeth should also be brushed, right, front, and left sections of the upper and lower sets. Each section is brushed sixteen times if the regulation toothbrush drill is used.

from within the body: the dog's chief need for bathing comes from dirt that collects from the outside.[1] Emphasize the desirability of taking a full bath at least once a week and call particular attention to the importance of having clean hands before eating. Talk about the tongue as the organ of taste; speak of the tongue of other animals, as the cat, rabbit, squirrel, snake. Cleanliness of the tongue ranks next in importance to that of the teeth.

Are you keeping clearly in mind the greater importance of fixing *habits* of hygiene in these little people than of teaching *facts* in hygiene? Use the facts talked of with the class to stimulate interest in the practice of hygiene.

SIXTH WEEK

Overfeeding. What do we mean by overfeeding? Point out that it makes the dog lazy and has a similar effect on other pets. Is this true of children? Explain why it is dangerous to torment dogs or cats when they are eating. More boys than girls are bitten by dogs. Is it true that boys are more cruel to animal pets than girls are? Explain that the animal is more justified in overeating than children are, because he is uncertain when and from where his next meal is coming.

[1] Cleanliness is valued because of the comfort, pleasure, satisfaction, and sense of decency which it gives. Taking a bath is valuable much more for the æsthetic, physiological, and psychological effects than for the protection which it may give from disease. Emphasize the desirability of cleanliness of the person, clothes, and surroundings, but at the same time point out the fact that disease germs come from diseased people and not from uncleanliness such as failure to take a bath, clean up the back yard, or whitewash the barn.

Point out that the dog hasn't the use of a refrigerator to keep food for which he has no present need; he must either eat all the food he has or bury it in the ground. Have a simple discussion on the care of food, bringing out the idea that the condition that makes food spoil is the same as the one responsible for much of our ill-health — presence of germs.

What are *your* Sunday eating habits? Do they do credit to you as a teacher of health habits?

SEVENTH WEEK

The animal's home. Where do the animal pets live? Does the dog have its own house? What are the probabilities that you would find dirt, old hair, fleas, bones, etc., in his house? Have a lesson on the care of the home, with particular reference to cleanliness. If your dog should come to school as did Mary's lamb, what lessons about cleanliness would you teach him? Point out that the dog keeps healthy even if his house is untidy, because his home is well ventilated and is not overheated in winter. Show that the dog likes fresh air — he usually sleeps with his nose at the door. Explain that the kind of uncleanliness that causes sickness is associated with dirty hands, foul teeth, sputum, nasal secretions, infected insects, and polluted food and drink. Lay stress on the importance of breathing air that is fresh, cool, moist, and free from dust.

Do you understand about ventilating your classroom? Do you realize that you must open windows for warm and "second-hand" air to escape, as well as for cool fresh air to enter the room? Remember that fresh air is more readily heated than stale air.

EIGHTH WEEK

Cleanliness. Have a discussion of the way a dog takes his bath, the reason why he takes any bath at all, and the way in which he dries his body. Compare the dog's reasons for taking a bath with those of a child. Call attention to the fact that the animals wash their "clothing" and their bodies all at once, while people wash their persons and their clothing separately. Explain briefly the different kinds of baths and their advantages — the hot bath for cleansing and sedative purposes, and for relief in case of chills, injuries, and muscle pains, and the cool bath for reducing fever, for training the skin to react when exposed to cold ("hardening the skin"), and as a tonic. Interest children in keeping their pets clean by calling attention to the fact that animals can not change their clothing when it becomes soiled and need to be given a soap and water bath regularly. Point out the usefulness of the fine comb, for animals and children alike. Show that cleanliness seems to be instinctive in certain animals; for instance, the cat washes her face with her wet paw.

Animals should be kept away from sick children, for it is possible that they may be instrumental in spreading disease.[1]

Call particular attention to the desirability of having a clean body and clean clothing. Have a mirror in

[1] There are cases on record which seem to indicate this possibility. Recent experiments, however, have tended to discredit the belief, certainly as far as it relates to the spread of diphtheria. Careful tests were made in which diphtheria bacilli were inoculated in the nose and throat of kittens and attempts made to recover them in culture. All efforts to recover diphtheria bacilli failed. However, the question is still debatable.

the hallway or classroom for the use of the pupils, so that they may get into the habit of observing the cleanliness of their faces and the condition of their hair. Some schools provide a shoe-blacking outfit: it helps stimulate pride in personal appearance. A small flag may be given to the row having the best record for cleanliness at the morning inspection.

Are you keeping in mind the importance of internal cleanliness, as well as external? Most adults observe the latter, but few observe the former. Yet of the two it is by far the more necessary.

NINTH WEEK

Health of animals. Where, in the opinion of the class, do we find more sickness — among the animals or among children? Reasons why the dog usually has good health — he sleeps in the open air, doesn't upset his stomach by eating lots of candy and rich pastry, has clean teeth, and is regular in his exercise and sleeping habits.

Probably the most important reason that the domestic dog escapes disease is that he is not subject to exposure to the disease germs of other dogs; when dogs are brought together in large numbers they have the same troubles with infections that human beings have. It is important to have the pupils understand that most disease comes from association with diseased people or with things which these people have recently infected. A diseased and ignorant human being is one of the most dangerous animals a child can meet.

How do you know when the dog isn't feeling well?

Point out that he doesn't care to play, his nose is dry and warm, his eyes are dull, and he has no appetite. Mention some of the symptoms and signs of sickness in children: loss of appetite, running nose, coated tongue, flushed face, sore throat, languor, rise in temperature. Emphasize the rule that children who feel sick should tell their parents and should keep away from other children until they feel better. Try to stimulate interest in health habits by explaining that children have to fight disease with the same intelligence that their older brothers showed in fighting disease as part of their duties as soldiers and sailors in the World War.

Are you as alertly on the watch for signs of sickness in any of your pupils as you are for the detection of the chewing-gum habit, or whispering, or inattention? Your greatest responsibility as a teacher is the conservation and development of the health of the children placed in your care. Consult Burk's *Health and the School.*

TENTH WEEK

Accidents to animals. Name some of the accidents that might happen to animal pets. Dogs step on nails, get run over, break their legs, choke on bones, etc. Show that the dog has the instincts of a doctor — he washes his wounds. How? Explain that the tongue is not so good as an antiseptic, but it is better than nothing. Name some of the accidents that might happen to children. Discuss the simple treatment of a cut. Point out the importance of cleanliness in case of a cut.

Call attention to the danger from playing with sharp

sticks, matches, strange animals; of playing in the streets, stealing rides, putting coins into the mouth, throwing stones and snowballs, taking "dares" that endanger life and limbs.

Interest the children in protecting animals from abusive treatment, as kicking, whipping, tying cans on their tails, and throwing stones at them. Bring out the idea that every dog is some one's pet; also that it is cowardly to abuse animals that are alone and unprotected by their master.

Have you ever considered what you would do if called upon to treat a bruised knee or head? Do you know what to do if some one faints in your classroom? Is there a First Aid cabinet in the school? Is it ready for use, or have the supplies been used up? If you do not feel able to handle the emergencies, get some instruction from the school physician. Your principal would do well every year to have the school physician demonstrate to all the teachers how to use the First Aid Outfit.

ELEVENTH WEEK

Hygiene of the feet. Reasons why children wear shoes: for protection of the feet from injury and from cold, to avoid catching cold, and because of custom. Why doesn't the dog catch cold when he gets his feet wet? Emphasize the importance of keeping the feet dry and warm. In certain localities the danger of hookworm should be discussed.[1]

[1] In this country hookworm is a disease of the Southern states. It is due to the presence of small worms — hookworms — of about the thickness of No. 8 sewing thread and from a quarter to half an inch in length. The

Discuss the way in which the feet of animals are protected, especially the dog and the cat (because children know most about these two animals). Point out that the dog lets his nails grow long for protection to his feet and for use in digging. In some cases, long nails may be helpful in defense. Scratches from animals are often infectious because such breaks in the skin give an opportunity for the entrance of pus germs. Give a lesson on the care of the nails. Explain how dirt and germs get under the finger nails, and point out the reason for washing the hands before eating.

Call attention to the fact that plants and germs are alike in many ways; show that they both need suitable soil — plants grow in garden soil and *disease germs in human soil.* Point out that the habit of putting the fingers into the mouth is worse than putting the toes into the mouth would be, because usually there are no disease germs on the toes.[1] Use this thought to shame the children out of the finger-sucking habit.

worm is found in mud and dirt that has been contaminated with intestinal discharges, and enters the body through the skin, usually of the feet. The local skin condition is called by various names, such as "ground itch," "toe itch," and "dew poison." The worm attaches itself to the interior of the intestine and takes blood from the body and also poisons it. The disease must be combated by treatment, protection of the feet, and disinfection of all intestinal discharges. As long as the soil is polluted, hookworm disease will always be a menace. Sanitary measures will eliminate the disease.

[1] Hands are continually touching other hands and things which other hands have touched. If disease germs have been smeared on any of these objects touched during the day, there is a possibility that the germs will be transferred and at once become a danger to the person whose hands have thus been infected. But this infection is of no consequence provided the individual does not put his fingers into his nose or mouth, deposit infectious material on objects which enter his or another's mouth or lips, or infect the

Discuss the reasons for washing the feet regularly: call attention to the fact that unless cleanliness is practiced perspiration from the feet may cause disagreeable odors. Warm water relieves tired feet.

Compare the pads on the feet of animals with the custom of wearing rubber heels. Do the children walk as quietly as animals do?

There is more material suggested here than can be used in one week. The teacher must select what will best help her in interesting children in the hygiene of their feet, a topic which should include discussion of the foot bath, the importance of drying damp stockings, and the airing of shoes.

TWELFTH WEEK

Hygiene of the eyes. Some animals have poor eyesight, but not because they strain their eyes by reading in poor light or doing any of the foolish things humans do that tax the eye muscles. What evidence have you that many animals have good vision? Discuss eyesight in the watchdog, the cat, the mouse, the owl, and the bat.

The usual evidence that a child has poor eyesight is easy to observe. The pupil holds the book close to the face, has difficulty in reading work on the board, complains of headache, squints the eyes and wrinkles the brow, has inflamed eyelids, and may be subject to styes. The Snellen Chart[1] will reveal cases of myopia

food and drink which he or others may take. The feet have no opportunity to collect disease germs and therefore are clean, in the sanitary sense of the word, as long as shoes are worn.

[1] For children who have not learned their letters some other test must be used. The McCallie test, consisting of cards with pictures of a boy, a girl, and a bear playing ball, is suggested.

(near sight), but it does not reveal cases of far sight. Children should be tested for near vision, therefore, as well as for distant vision.[1] Abnormal conditions that are harmful to the eyes of children are: reading in poor light, sitting too far front at motion-picture shows, constant use of the eyes in reading or sewing, irritation from dust or smoke, wearing glasses with ill-fitting frames and incorrect lenses.

Talk about the hygiene of the eyes in the morning: washing out the corners; using boric acid solution if the eyelids feel sticky. Caution the pupils against rubbing the eyes with dirty fingers or a soiled handkerchief when foreign bodies get into them.

Speak of the games that endanger the eyes: playing with bows and arrows, reckless use of the sling-shot, carelessness with air rifles and bean-shooters. Stimulate interest in the protection of the eyesight by showing how the eyes are naturally safeguarded: the winking reflex, eye socket, fat pad behind the eye, tears, lashes, and eyebrows. Lay stress on the importance of cleanliness. Emphasize the importance of resting the eyes when they begin to ache. A change of focus often rests the tired muscles of the eye.

Have the eyes of the children in your care been tested this year? Do children with glasses have seats near the front of the room? Do you realize that every child needs medical attention who holds the book near the

[1] The test for near vision shows cases of far-sightedness that might escape detection if only the test for distant vision is given. A far-sighted person can accommodate his vision for a time by straining his eye muscles, and consequently the Snellen Chart alone will not reveal the defect. The near vision test, however, defies the power of accommodation of persons who are far-sighted.

face, rubs his eyes frequently, scowls when reading, has red eyes, has crusts on the lids, or has inflamed eyelids?[1]

The observing teacher can judge the pupils' vision pretty accurately by noting evidence of eyestrain. Eyestrain is muscle-strain, and it results in a congestion of blood in the appendages of the eye. Hence swollen and reddish eyes suggest that there is some defect in the eye.

THIRTEENTH WEEK

Hygiene of the ears. Have the children tell what they know about a drum. Draw a diagram of a drum on the board. Ask how many of the class have drums. Call attention to the fact that each child has at least two drums, one in each ear. If convenient, have one of the class bring a drum and let the children note the difference in the tone when the hole in the side of the drum is closed. Explain that air is necessary inside the drum as well as on the outside, and is equally necessary inside the drum in the ear. This air passage in the ear is closed when one has a cold, and hearing is then greatly decreased. Compare the hearing of animals with that of human beings. Bring out the importance of hearing: in learning, in avoiding accidents, in the enjoyment of music.

Caution the class about putting instruments into the ear in an effort to remove wax. Explain that cleanliness of the ear is desirable because of the unsightly accumulation of dust and dead skin near the opening;

[1] Inflammation of the eyes may indicate an infectious disease, such as trachoma.

the cleaning of the inside ear occurs naturally, if one attends to the cleanliness of the outer ear. Caution the class about blowing the nose so hard that the ears "crack." The danger is from mucus and germs that may be forced into the ear passages opening from the throat. Explain that many earaches are caused by colds in the head.

Children with running ears should be referred to the school physician. Have you tested the hearing of the pupils in your class? Do children with poor hearing have seats near the front of the room?

FOURTEENTH WEEK

The nose and throat. What is the nose for in animals? Point out that to animals the sense of smell is an important means of protection, as well as an aid in the recognition of other animals; it is the animal's "detective sense," in most cases more important to him than sight or hearing. Show that the dog breathes through his mouth as well as through his nose. Call attention to the fact that children should breathe through the nose, because the nasal passages warm the air, filter it, and add moisture to it. Point out that breathing through the mouth makes the mouth dry. Do the children ever wake up in the morning with a dry mouth? Why is "raw air" better than "cooked air"?

Explain that the best way to avoid earache is to look after the nose and throat. Most earaches begin in the nose. Direct attention to the proper use of the handkerchief. Ask how many have a clean handkerchief. Discuss the causes and treatment of nosebleed. How many

children know how to gargle? Children should practice the habit of gargling the throat as well as that of washing the hands; both are cleansing processes.

Do you know the signs and symptoms of adenoids? Has your class any mouth-breathers or children with nasal voices? Have you called the attention of the school physician or the nurse to such cases? The children can be taught more successfully if they are freed from physical handicaps, such as nasal obstruction, defective hearing, poor vision, etc. Take time now to assure yourself that the children have no remediable physical handicaps that are passing untreated. Consult Hoag's *The Health Index of Children.* Wood's *Health Essentials for Rural School Children,* published by the American Medical Association, Chicago, is an excellent pamphlet for work in rural schools.

FIFTEENTH WEEK

The child's health habits. Have you been teaching hygiene this year, or has it merely been lessons? Are you using these lesson outlines to teach habits, or are you merely teaching facts? What health habits have you taught this year? Have you watched the habits of the children in your class carefully enough to know what the common faults are? Discourage the habit of picking the nose; make it clear to the class that you do not like to touch the hands of children who put their fingers into their noses or into their mouths. Make it clear also that biting the finger nails is a habit that should be overcome, because it makes the nails unsightly and often carries disease germs into the mouth. Some of the important habits to cultivate in children

are: the proper use of the handkerchief to keep the nose clean, rather than the easier method of using the coat sleeve; the use of the handkerchief when coughing or sneezing; good table manners (emphasize the importance of washing the hands before eating to avoid getting disease germs from other people); keeping the fingers out of the mouth; washing the hands after eating; cleanliness of the body and clothing; care in cleaning the shoes before coming indoors (to avoid tracking in dirt and filth). Explain why these habits are desirable: older people expect intelligent children to know these things and to practice them; these habits help in avoiding disease; the teacher much prefers clean children; credit may be secured on the school hygiene record.

Keep in mind the fact that the subject of health has but little interest to children who are well, and that you must make use of their desire for your approval, their tendency to imitate those whom they admire, their interest in competition, and their pleasure in doing something that has the appearance of bravery or usefulness. Please glance over the introduction again (page 43).

SIXTEENTH WEEK

Play.[1] Do the children in your class know how animals obtain their education? Where do the animals

[1] Recreation should be considered by teachers as nature's "preventive medicine." Note the difference between preventive medicine and curative medicine. Recreation — enjoyable physical activity — is valuable in preventing non-infectious diseases, the diseases of degeneration, and certain of the diseases that result from dissipation and other infractions of the laws of individual hygiene. Looked at from this standpoint, the right

go to school? Point out that their most important study is play. It teaches them how to secure their food, and how to defend themselves from an enemy; it makes their muscles strong. Call attention to the way in which they run and wrestle with each other. Point out that they usually play fair with each other; they don't bite when playing, and they give each other an opportunity to get up when down. They don't cheat. Contrast the way in which animals and children play. Emphasize the importance of playing fair. Point out that no one cares for a cheat or a bully. Explain that muscle is more useful if the mind is trained so that strength can be used to the best advantage.

Have you been using the play instinct in children to stimulate their interest in their school work and in your leadership? Do you play with the children, or are you one who regards the recess period and the physical training period as an opportunity to shirk responsibility? Experience bears out the statement that the most successful teachers are usually those who play with their pupils.

Do not neglect the periods of short physical exercises. There are several excellent reasons for giving short setting-up drills during the day. Study and recitation work demand the skillful use of the *small* muscles, those of the eyes, fingers, lips, and tongue. This type of physical training is more mental than physical. These small muscles require the expenditure of con-

kind of recreation makes for a more efficient and a happier life and, other things being equal, a longer life. The teacher is referred to Teacher's Leaflet No. 7, *Recreation and Rural Health*, published by the Bureau of Education, Washington, D. C.

siderable nervous energy in order to make them exercise properly and skillfully, but they do not stimulate deep breathing, increase the circulation of the blood, help in the digestion of food by stimulating the abdominal muscles — do not, in fact, serve any vital physiologic need of the body. Their use results in nervous strain and in muscular fatigue. Setting-up drills that use the *large* muscles of the body execute an " about face " in the physical condition of the pupil — and of the teacher, too, if she takes the work.

The exercises should be simple and sufficiently muscular to make the pupil breathe deeply at the close. They should be given with snap, in a well-ventilated room. Properly given, a setting-up drill serves as a tonic to the child and puts him in better condition to take up his class work again.

Remember that the hygiene of the mind is quite as important as the hygiene of the body. Children often are fidgety because they are fatigued mentally. This fatigue may come from unreasonable discipline of children, particularly discipline that restricts their natural activities, and it needs to be guarded against with the same care as over-use of the mental faculties in connection with school work.

SEVENTEENTH AND EIGHTEENTH WEEKS

Informal review. An excellent plan for review is to read to the class from such books as *The King and his Wonderful Castle, Yourself and the House Wonderful,* and *The Little City of You.*

The following topics may be discussed by introducing material omitted during the term:

Accident prevention. Perhaps you could afford to take chances if you were a cat with her proverbial "nine lives," — but you are not. Be as spry as a cat, but more intelligent in your efforts to escape accidents.

Rest. Teachers need to keep in mind the importance of rest as well as exercise. For some children the recess period or the physical training period should mean an opportunity to rest, not merely to sit still and idly watch others, but to recline if possible. As a rule, children do not need to be stimulated to play; quite the opposite, some of those who play should be getting physiologic rest. This is especially true after recovery from illness, or if the child is suffering from malnutrition or undernourishment.

Cleanliness. "Look before you eat." Analyzed, this means that food, drink, dishes, and hands should be clean at least of visible dirt.

Vitamins. Too much can not be said about the importance of having enough of the dairy products, fruits, and vegetables in the diet. Milk, butter, eggs, oranges, tomatoes, and green leafy vegetables are of particular value as articles of food. They contain vitamins which stimulate the appetite, influence growth, and help in building up resistance to certain diseases.

Overfeeding. It has been said that "it is bad to waste food but far worse to waste it by eating it when the body has no need for it." Explain that overfeeding burdens the digestive and eliminative functions of the body; moreover, it wastes food that might be eaten later with profit. Overfeeding is poor physiology and poor economy.

First Year — Second Term

Central Topic: *Hygiene in Nature (Continued)*

First week.	The Geranium
Second week.	How Plants Breathe
Third week.	The Plant's Food
Fourth week.	Roots ("Hands" and "Feet")
Fifth week.	Growth
Sixth week.	Hygiene of the Skin
Seventh week.	Plant Wounds
Eighth week.	Bird Life as an Approach to Hygiene
Ninth week.	Sleep
Tenth week.	Cleanliness
Eleventh week.	Accidents
Twelfth week.	Insect Life as an Approach to Hygiene
Thirteenth week.	Why Flies are Bad Neighbors
Fourteenth week.	The Fly's Food
Fifteenth week.	Getting Rid of Flies
Sixteenth week.	The Child's Personal Habits
Seventeenth week.	Review
Eighteenth week.	Review

Applications of hygiene necessary. The teacher in the elementary grades should always keep in mind that she is primarily concerned with the formation of wise habits of hygiene in the lives of her pupils, and that to teach these habits she must be consistent in everything she does that pertains to hygiene. Unless she makes it a practice to secure fresh air in the classroom, her suggestion that children should keep the windows of their bedrooms down at the top and up at the bottom will probably fail of desired results. Unless her instruction in hygiene consists of something more than theory, her time and the time of her pupils will be largely wasted.

The plan of work which is offered here, or any other plan that has ever been suggested, or any plan that may subsequently be developed, will be largely barren of helpful results in the health education of little folks unless the teacher works for practical results and adapts her lessons to the peculiar needs of her pupils, whether the children come from the tenement district or from the well-to-do residential section of the city. She needs to understand something of the racial habits of her pupils, the home conditions in which they live, the educational and the financial status of their parents. Most important of all, there must be a sincere desire to influence the lives of the pupils in such a way that the toll which sickness and death take from every group of children may be very materially reduced. The responsibility is great; it can not conscientiously be avoided.

Plant life as an approach to hygiene. For the informal instruction in health education, continue to use the child's interest in the different kinds of life that surround him as an approach to the subject. A comparative study of plant and child hygiene offers a valuable means for presenting the topic in an interesting way.

The following lesson plans may be used as a foundation for the consideration of any plant which the teacher may wish to take up. While the geranium seems to serve the present purpose better than some of the other plants generally found in classrooms, it is evident that the main points may be brought out in connection with almost any of the plants commonly known to the children.

FIRST WEEK

The geranium. Which blossoms, by reason of their color, suggest a lesson in health? (The red and the pink.) What other plants have healthy-colored blossoms? Ask the pupils for their definition of "health." Point out some of the ways in which a pupil's health is judged: regularity of attendance at school, frequency of colds and other diseases, color, growth, strength. Call attention to the change in a person's color that comes from outdoor life, and from sickness, fever, fright, fainting, or loss of blood.

Discuss the conditions that make green plants healthy: sunlight, suitable soil, water, cleanliness (freedom from parasites). Show that a pupil's health depends largely on these same conditions. Question the class about the amount of sleep they get, what they eat for breakfast, the care of their teeth, etc. Children from six to eight years of age should have between eleven and twelve hours of sleep, and should be in bed by seven or eight o'clock.

Did you make use of the cartoon plan for stimulating interest in hygiene last term, as outlined on page 44? Try to keep the subject of health alive in as many ways as you can; make it live during the whole school day, and make it so interesting that the children will wish to take its lessons home with them, either in picture form or as an interesting event among the important happenings of the school day to be reported.

SECOND WEEK

How plants breathe. Has any one in the class ever seen a plant breathe? Plants are as much alive

as animals, and they too must breathe in order to live. But we can not see them breathe, because they have no lungs, as people have.

How is it, then, that plants can breathe? Over the surface of a plant are tiny openings, most of them so small that they can not be seen without a microscope. Through these "mouths" the plant gets the air it needs to live and grow. All living parts of a plant must "breathe," — leaves, flowers, young stems, and roots.[1]

Do the children know how their own breathing differs from that of plants? Explain briefly that they take fresh air into the lungs; the blood then takes the air to all parts of the body. Plants have no blood, so they have to "breathe" all over the body. Plants breathe through "mouths." Should children breathe through their mouths?

Sometimes plants have diseases that are caused by germs entering the "breathing system" through the open "mouths." People also may have diseases of the breathing system (lungs, nose, etc.) that are due to germs entering the mouth and nose. Explain briefly that colds, pneumonia, and consumption are caused by germs, and that the germs are scattered in the air when people cough or sneeze or spit. It is always effective to have children hold a mirror a foot or two from the face and cough. The small particles

[1] Leaves are not the "lungs" of a plant. Neither do plants "breathe" carbon dioxid. If we except a few anaerobic bacteria, all plants use the oxygen of the air in respiration. Perhaps some of the class have seen corn or wheat turn yellow in a field that has been flooded with water for some time; the water had cut off the oxygen supply for the roots of the plants, and because respiration was no longer normal, the roots were unable to carry on their other functions of supplying the plant with material for food.

of saliva that collect on the mirror are conspicuous. Explain that if any disease germs were present in the mouth, each droplet would contain a number of them. Have a pupil demonstrate the proper use of the handkerchief in blowing the nose, or in guarding the face when forced to cough or sneeze.

Show by class experiment that it is easier to breathe when the body is erect. Have the class try deep breathing with the trunk bent forward, and explain that one reason for keeping the body in good position is to give the lungs more room to expand in.

Emphasize the idea that the lungs need to be "washed" in clean, fresh air, just as the body requires washing in clean water. Ask for a show of hands of all who have their bedroom windows open at night. Explain that better ventilation is secured if the window is open at both top and bottom. This is not so essential if additional ventilation is possible through a second window or from another room. If windows are half screened in summer, ventilate only where screens are.

Do you make certain that your classroom is ventilated at every recess and at all physical training and singing periods? Remember that good ventilation means fewer disease germs per pupil. (Running water clears more quickly than stagnant water.) Try the experiment of leaving your class hourly for at least fifteen seconds and when you return note the odor of the room. Dry, stagnant, warm air handicaps the best efforts of the teacher to stimulate her pupils. "Stuffy air stifles study." [1]

[1] Mechanical ventilation, because it is automatic, may fail to give the variability in temperature and current that is so desirable. The tonic effect

THIRD WEEK

The plant's food. Do the children know how plants obtain their food? Explain that green plants make their own food out of water, earth, and air. In fact, every other living thing on the earth depends on the food that green plants make. Roots take water, which contains dissolved minerals, from the soil, and the water finds its way into the leaves. In the leaves, under the influence of sunshine and the green coloring matter in the leaves (chlorophyll), the water and part of the air (carbon dioxid) combine to form the simplest kind of plant food.

Plants have no stomachs, as we have. We need stomachs to help change the food that we eat into a form that can be used by the body in growing and working. But all parts of a plant act as a stomach for it in changing the food so that the plant can use it to grow and open the flowers that are in bud.[1]

Have the children tell what they eat at the different meals. Emphasize the importance of having milk with the meals, rather than tea or coffee. Discuss the value

of fresh air is due in large part to the fact that it is continually stimulating the skin as the result of its variability. All schools should have some natural ventilation some time during the session. Open air schools testify to the value of free ventilation as a factor in promoting health.

[1] It is difficult to make an accurate comparison between the physiology of plants and the physiology of man. The heart and blood stream in man, which are not found in plants, make respiration and digestion entirely different in the two organisms until the physiology of the cell is reached. It seems, however, that the child can be interested in his own vital processes by calling his attention to the peculiar (to him) ways in which these processes are carried on in plants. No attempt should be made to teach plant physiology, and analogies must not be pushed to the point where they would be scientifically misleading in important fundamentals.

of bread, butter, eggs, cereals, milk, green vegetables, tomatoes, and fruit. Do the children know what happens to food when it is eaten? Explain that food must be digested before it can help to make the body grow; that is, it must be changed so that it can be absorbed by the blood and carried to all parts of the body. Plants never suffer from "indigestion," as people do, because their food has been improperly eaten or chewed too hastily, or too much has been taken. (Plants are affected, however, by the character of the soil from which they secure the materials for their food.) Make the subject of digestion lead up to a discussion of the teeth and their hygiene.

FOURTH WEEK

Roots. Roots serve as "hands" and "feet" for plants. Explain how roots serve as hands for the plant, reaching out into the earth to take up nourishment. Roots serve also as feet for the plant: they keep it erect in the earth. Discuss posture of trees and posture of children; mention the effect on a tree of bending it while it is still a sapling. Point out that the hands of a plant are always "dirty," but that this kind of dirt does not cause disease. It is *human* dirt that causes disease. Discuss the hygiene of the hand, emphasizing the importance of having clean hands, particularly before eating. Discuss also the hygiene of the feet.

Have you any form of morning health inspection? Are the pupils aware that you note the state of the hands and face, the appearance of the hair and clothing, the condition of the desks, and the cleanliness of the floor under the seats? Many schools are mak-

ing this very serious mistake: the teachers are doing their best to train their pupils in proper habits of hygiene, such as cleanliness of the hands, particularly after attending the toilet, and yet, through some negligence, no water or soap or paper is provided in the toilets.[1] Is your school making it convenient, or even possible, for children to practice the habits you teach? Every effort should be made to see that instruction in hygiene can be applied. Does your school supply paper towels? How is the problem of supplying good drinking-water met?

FIFTH WEEK

Growth. Do the children know what makes plants grow? Lay stress on need for food, water, air, and sunshine. Name the things that make children grow: food, fresh air, plenty of sunshine, exercise, rest, and sleep. Point out that trees grow outward, but that the increase in height takes place at the top. If children make a mark on some tree, they will discover that the mark remains at the same height, although the tree grows in height. Growth takes place at the top. Children would be peculiar-looking individuals if this were the way their growth took place.

Discuss the age of trees. The sequoia and redwood trees in California live to be three and four thousand

[1] In many localities, the teacher will have the problem of the outhouse to consider. Attention should be called to the importance of having the privy clean, and the windows screened. The receptacle for night soil should be flytight, and the vent flue screened at the top. Paper should be provided The outhouse adds to the responsibility of the teacher because of its moral problems, and the increased danger of typhoid fever and hookworm in the community.

years old. Some are large enough for coaches to pass through.

Point out that sunshine is good for nearly everything that lives except germs. Think of sunshine in the home as something that will brighten the color in a child's cheeks and put health in his body. It is of less importance to know that sunshine sometimes fades rugs and draperies if allowed to enter through uncurtained windows. The human plant can not thrive without the presence of sunshine.

Are your classrooms getting the germicidal value of sunshine whenever it will not interfere with the pupils' vision, and particularly on days when school is closed? Or does the janitor lower the curtains during the week-ends, and for all vacations? Place more emphasis on cleanliness, sunshine, fresh air, and good habits of hygiene for the protection of children in the classroom, and less emphasis on fumigation and antiseptics.

SIXTH WEEK

Hygiene of the skin. Ask the pupils what the skin is for. Explain that it protects the body from injury, keeps germs out, keeps the body warm and also helps to keep it from getting too warm, eliminates waste matter, contains the organs of touch, and gives some indication of a person's physical condition (color, absence of pimples). Show that plants have a "skin" and that certain plants grow hair and scales, as well as prickles, as a part of the skin. Discuss the hygiene of the skin. Point out that plants sometimes need washing to free them from lice.

Do you know anything about the common diseases

of the skin? Can you recognize scabies (itch), impetigo, ringworm, pediculosis capitis (head lice)? Your medical inspector or your school nurse will be glad to explain about these conditions. Keep these minor skin diseases in mind as well as the more serious major skin diseases. Read up on the health examination of pupils. For selfish reasons, as well as for altruistic reasons, you should know about this important feature of modern health education.

SEVENTH WEEK

Plant wounds. Recall the fact that when the stems of many of the common plants are bruised they "bleed," and call attention to the difference between the "blood" from plants and that which comes from a cut finger or a bruised knee. Explain that blood circulates through the whole body, taking food and oxygen to the muscles and bones and brain and all other parts of the body. Bring out the idea that plants have sap which serves as a nutritive fluid in place of the blood that animals have. Direct attention to the general location of the heart. Plants have no heart.

Call attention to the value that plants have in medicine and in the manufacture of clothing.

Have simple discussion of the treatment of wounds, emphasizing the importance of using a clean bandage. Explain that cuts are bandaged to keep germs from getting into the wound, not because there is danger of catching cold in the wound. Discuss care of the vaccination sore.

Dramatize some incident related to "safety first" in the prevention of wounds and the treatment of

wounds to prevent subsequent infection. Illustration: Children wish to build a playhouse. Have to knock a box apart to get lumber: care taken to get all nails out of the boards, so that no one will be injured; caution in the use of the hammer. Sawing the boards off at the proper length: caution in the use of the saw. Use of a knife to make the edges smooth: caution the class to cut away from the body. Use of the screwdriver in constructing the house: injury to the hand resulting from a slip of the screwdriver. The use of a clean bandage: caution the class against attempting to stop the bleeding with cobwebs, clay, or dirty bandages.

EIGHTH WEEK

Bird life as an approach to hygiene. What birds do the children know? When do they come? When do they go? What birds remain all the year? Why doesn't the robin remain all winter? Explain about the Audubon Society.[1]

Where do birds build their nests? Call attention to the fact that nests rarely keep out the rain. Why don't birds catch cold when they get wet? Show that feathers protect the body from cold, and to a certain extent from water. Emphasize the importance of keeping the body warm and dry. Point out that birds have lots of fresh air: their homes are always well ventilated. Review lessons on ventilation.

Are you getting the benefit of fresh air at night in your own bedroom? Of course you know that the only "bad night air" is last night's air, and that you

[1] Information may be obtained from the National Association of Audubon Societies, 1974 Broadway, New York.

ought therefore to open your windows every night and let it out. If people were to ventilate their homes as readily as they air their opinions, consider what the effect would be on the sickness and death rates!

NINTH WEEK

Sleep. The robin goes to bed at a reasonable hour and gets up early in the morning. Bring out the fact that growth takes place during sleep. Can you imagine a robin being late for breakfast or for school?

What does the robin's breakfast consist of? Simple discussion of foods; explain what foods children should have for breakfast. Use judgment here and make your menu suit the pocketbooks of the children's parents.

The robin has no teeth: how does he chew his food? Explain simply about the gizzard in birds. Review lesson on the hygiene of the teeth. Have an inspection of the teeth. Keep before the class the idea that a decaying and unbrushed tooth is like a small garbage can; in both cases the food decays and unpleasant odors are formed. Compare the way to clean a garbage can and the way to clean a tooth.

Now that we are considering the lesson on sleep, the time seems opportune to ask this question: Do your pupils do their sleeping in school, or at home? Sleeping in the classroom is usually due to poor teaching, poor ventilation, or poor health. This gives you an alibi if you need one.

TENTH WEEK

Cleanliness. Ask how the robin cleans his face after each meal. Point out that he wipes his beak on a twig

or with his claw. How would our faces look if we used this method? Review the lessons on personal cleanliness. Point out that the robin keeps his feathers well brushed by using his beak as a comb and brush. Give a lesson on the care of the hair and the clothing, with inspection of person and clothing for neatness and cleanliness. Has each child a clean handkerchief?

Point out that disease germs frequently get into the body as the result of uncleanliness, whether of the skin or the fingers, of eating and drinking utensils, or of handkerchiefs and other things which come in contact with the nose and mouth. It is necessary that the teacher understand and make clear to the class that cleanliness judged by the eye is not necessarily surgical or bacteriological cleanliness. It is very desirable that a child develop the habit of cleanliness, but it is even more important that he develop habits which will tend to protect others from his infectious excretions, and to protect him from the infectious material scattered about by ignorant and careless individuals.

Insist that conditions in the lunch room, the classroom, and the lavatories be kept satisfactory from the standpoint of both cleanliness and sanitation: cleanliness pleases the eye and nose and teaches by example; sanitation is a protective measure and of the two the more important. If you are to teach habits of hygiene to the children, the janitor must coöperate. How does he do his sweeping, and when does he do it? Are you having the pupils help you by erasing the boards at the close of school? Don't you think it is rather dusty work for them? Are the erasers cleaned outside the building? Do you meet with any success

in your efforts to have the children keep their books clean? Why not introduce the "privileged pupil" plan for children who practice the best habits of hygiene?

ELEVENTH WEEK

Accidents. What accidents do the pupils think of that might happen to birds? Broken wing or leg (from stones thrown by boys); injuries from falling out of the nest (young birds); injuries from cats. Point out that it is cowardly to throw stones at birds and to rob nests. Bring out the idea that birds have no means for securing relief from pain, as human beings have. Can the children imagine what it would feel like to go all day without food, or to suffer for days with a broken bone and have no medical care? What are some of the common accidents that happen to children? Teach the prevention of accidents; review the lesson for the tenth week in the first half year's work (page 61).

Do your pupils know their places in the fire drill? Are you on guard to prevent accidents in the classroom during the game period (have pupils keep their feet under the desks in all aisle running games) and on the playground? Are the swings supervised? Is other playground apparatus safe?

TWELFTH WEEK

Insect life as an approach to hygiene.[1] The fly is the most common of insects. Mention his birthplace in garbage piles, about the barn, near pigpens, wherever

[1] Dr. A. B. Hodge suggests that a glass containing the eggs of the fly be brought into the classroom, so that the different stages through which the fly passes in growing to the adult may be learned through observation.

there is filth. At what time of the year do flies have the most birthdays? Explain about the eggs, worm stage, and adult fly. Do the children know any reasons why the fly should be killed? Point out that the fly has other enemies besides human beings. Speak of the spider and his web, the house centipede, and diseases which kill off many flies. Discuss other insects, particularly the mosquito. The fly spreads disease by infecting our food and drink; the mosquito spreads disease by infecting our blood. The child who is careless of his personal hygiene may be just as much an enemy of health as is the filthy fly.

THIRTEENTH WEEK

Why flies are bad neighbors. Have any of the children in your class twin brothers or sisters? What is the average size of the families represented? Point out that the fly has many " twin " brothers and sisters; there are thousands in his family, and every one is an enemy of humanity. Flies are a serious menace to our health because there are so many of them and they can all take part in the spread of disease germs. Discuss the importance of the protection of food from flies. Disease causes more deaths in war than bullets do, and flies spread many diseases.

Explain that the fly would be harmless if it could be kept away from the infectious discharges of diseased people. This is one of the important ways in which experts in public health are trying to reduce the amount of disease in their communities. Special care is taken to prevent access of flies to the sickroom, and equally good care is taken to disinfect the discharges of the

patient so that they will not be infectious in case they should come in contact with things which people touch, eat, or drink. This is not possible in many cases, because a disease often is infectious for some time before it is recognized. It is therefore necessary that other hygienic habits be practiced. Many of these have already been discussed. Mention some of the ways in which flies become infectious, as feeding around outhouses and toilets, sewers, cuspidors, on sputum in streets, and in buildings and sickrooms. Explain why "filth, flies, and fever" are often associated.

FOURTEENTH WEEK

The fly's food. Ask the class what things the fly likes to eat. Ask how he eats. The fly has no teeth; he has to soften his food by saliva and then suck it up somewhat after the manner in which a child takes his chocolate soda. Point out that the fly has no table manners; he comes to the table without being invited, does not wash his hands, puts his feet on the table, and eats from every one's plate. What does the fly drink? Explain to the class that the fly drinks water, milk, and sewage. The fly has a "dirty" mouth. Impress on the child's mind, and make the reasons clear to him, that the fly spreads disease. Show that people spread disease in much the same way, unless they practice good habits of hygiene.

FIFTEENTH WEEK

Getting rid of flies. Do the children know what is meant by the term "cleanliness"? The fly does not.

How many of the class have gone barefoot? Call attention to the fact that when they did it was necessary for them to wash their feet frequently. The fly goes barefoot all the time, but his feet are never washed except in milk, drinking water, filth, and spittle. Would you allow any one with dirty hands to touch your food? The fly will touch it unless you prevent him. Which is more sensible, — to leave food on the table after breakfast and stand by the table all morning swatting flies to keep the food from becoming infected, or to put the food safely away, under cover, where the flies can't get at it?

Discuss ways of fighting flies. There are two ways to go about getting rid of them: (1) to pay no attention to conditions which permit flies to breed, and then try to kill off all that may hatch out; (2) to find out what conditions are favorable for the growth of the fly families, and then make the conditions unfavorable. Ask which of the two ways is the more sensible. When the street cleaning department pays no attention to sweeping the streets, and the garbage collection department lets garbage accumulate, and the inspectors permit owners of horses to maintain uncleanly stables and barnyards, what should public-spirited citizens do? Does a swat-the-fly campaign solve the whole problem?

Consider what can be done in the house to lessen the plague of flies: covering food that is saved for further use; keeping garbage carefully covered; closing screen doors as quickly as possible; having windows screened and keeping the screens down; taking care not to poke holes in screens; mending broken screens at once. It is a good plan to have a swat-the-fly day

to get out all the flies that are in the house; then do all that can be done to keep a new supply from coming in.

Do not spend all the lesson time in cultivating hate for the fly; he has no moral responsibility for our health. Rather try to inculcate the idea that we are to blame when we are too stupid or too foolish or too lazy to keep ourselves free from trouble by using the knowledge that we have.

Explain that it is but half the battle to fight the fly; personal hygiene is important too. Dirty hands on a child may be as bad as dirty feet on a fly. "Preventable diseases kill more people than preventable accidents." Join the "Health First" movement. Make health "catching" instead of disease.

SIXTEENTH WEEK

The child's personal habits. Review the lesson on personal hygiene for the fifteenth week of the first half year's work (page 68). Other habits to be formed:

(1) Taking proper care of school books. Care should be taken to avoid leaving dirty finger marks or pencil marks on the leaves or the cover, wetting the fingers in turning pages, tearing pages, and breaking the binding of the book. School books are loaned to the pupils in most schools, and through them respect for the property of another may be taught, as well as reading and the other lessons incident to the first grade.

(2) Taking proper care of the desk. The top and the inside of the desk should be kept clean, and care should be taken to avoid defacing the top of the desk. Call attention to the fact that the proper care of the desk includes cleanliness of the floor under it.

(3) Use of the handkerchief; of the toothbrush (don't brush the teeth at the washbowl which is used for the face; it is better to rinse the mouth over the toilet seat); of the clothesbrush (better to use it outdoors or in the hallway); of the door mat (makes less work for the housekeeper and lessens the danger of disease for small children who creep on the floor).

The use of a "hygiene game" may help impress on the children's minds the importance of the essential health habits and facts. The simple tag game may be used. The teacher appoints some pupil in the class as "it" and explains that "it" is a toothache, a sore throat, a cold, or an earache, which is going to chase the rest of the class. Play the game as seat tag is played. At the conclusion of the game ask those who were caught how they could have escaped the "disease" by practicing hygiene. For example, if "it" is a "sore throat," bring out in the discussion at the close of the game that the "disease" could have been avoided by gargling the throat, keeping pencils and fingers out of the mouth, drinking only from one's own cup, and keeping away from sick children.

Use the illustration of the treadmill and the stairs; point out that some people who are trying to climb to health are making the mistake of using the treadmill, and consequently they never get ahead. The intelligent way is to use the "health steps" that have been taught during the school year.

SEVENTEENTH AND EIGHTEENTH WEEKS

Have a general review of the work for the entire year. Summarize it by pointing out the following facts:

People, not filth, breed disease.

Contagious diseases are due to germs.

Germs cannot walk — they have to be carried.

Food — fingers — flies: the three principal carriers of germs.

A very good rule to follow is: "Watch and wash your hands."

A careless spitter is as dangerous as a careless hunter.

Cleanliness is important — internal as well as external.

It is necessary to ventilate your lungs as well as your room.

Interest in the review may be secured by constructing a "health alphabet." Write to the Child Health Organization, New York, for the booklet entitled *Child Health Alphabet.* Different letters of the alphabet may be placed on the board and some hygienic principle associated with them in the child's mind, as *A is for air, always get your share.*

The height and weight tables given on pages 206 and 207 may be secured from the Bureau of Education, Department of the Interior, Washington, D. C. These tables show about what a boy or girl should gain each week and what their weights and heights should be at different ages.

Valuable bulletins that may be obtained from the Bureau of Education are *Diet for the School Child, How to Conduct a Nutrition Class, Health Teaching, Further Steps in Teaching Health, Child Health Program for Parent-Teacher Associations and Women's Clubs,* and *Lunch Hour at School.*

SECOND YEAR

General Suggestions

The work with a class club, begun in the first year (page 43), should be continued, but in a slightly more formal way. The use of a club motto is an effective means of stimulating interest and securing coöperation on the part of the pupils. Such a motto as "Steer for Health" offers great possibilities for teaching hygiene. After a brief talk in which the class is asked to imagine itself a battleship trying to cross the Atlantic and having to avoid enemy submarines and mines, or a tank crossing No Man's Land, or perhaps an ambulance answering an emergency call, draw a large steering wheel on the board, with spokes on which to print hygienic principles, one every week or so. The principles, which must be brief and striking, should be developed in connection with a discussion of the dangers which the class " ship " or " tank " or " ambulance " has to face. Pupils may keep a similar steering wheel record in their note books, if they have them.

Several schools have met with considerable success in having a Health Record of the class kept by the teacher and read at the close of the term as part of the closing exercises.

Chalk talks. The use of chalk talks should be continued. They may illustrate incidents connected with the club motto. Helpful suggestions for carrying on this part of the hygiene work may be found in an interesting book, Waldo's *Safety First for Little Folks;* the subject is treated in an allegorical way, and there are some helpful suggestions on the use of pictures.

Accident prevention. There are several interesting readers on hygiene and on "safety first" that will serve admirably for use with children of this grade, in the hands of either the teacher or the pupils. Two inexpensive books of this type are Bailey's *Sure Pop and the Safety Scouts* and Waldo's *Safety First for Little Folks.*

Adjustment of school work to physical needs. The little people are returning to school from a long summer vacation, during which time they have enjoyed unlimited freedom of physical activity and an abundance of fresh air. It becomes the duty of the teacher, therefore, to take care that the transition from vacation time and freedom to the restraint of the classroom does not take place too abruptly. The children's need for physical relaxation periods in the classroom will be shown by the restlessness that overtakes their little bodies after the lessons have been in progress for a short time. The teacher has a very practical and important service to render in making every effort possible to protect the physical condition of her pupils by the use of relaxation periods (short setting-up drills, story plays, marching, etc.), intelligent attention to the ventilation of the classroom, recreation periods for all (with all taking part), early attention to the common symptoms of eye and ear defects, prompt notification to the proper authorities when children show symptoms of defective nasal breathing, proper assignments of seats and adjustment of the seats if necessary, and a purposeful method of making a morning health inspection.

Daily inspection. It is particularly important at the beginning of the school year to have health ex-

aminations each morning and either refer all cases of sickness and cases with suspicious symptoms to the proper medical authorities, or have the children sent home, subject of course to the approval of the principal. This is the time of year when measles, scarlet fever, whooping cough, and diphtheria, as well as other contagious diseases, often make their greatest inroads on the health of the school children. If the teacher sincerely hopes to bring any weight to bear against disease in her classroom, this is the best time to use her ounce of prevention.

Alcohol and tobacco. In this year's instruction on the harmful effects of alcohol, emphasize the fact that alcohol stunts the growth of the body. Explain that water makes a plant grow, but water with alcohol in it makes a plant wither. This fact may be made the subject for experimentation. Point out that the effect of alcohol on the human body is about the same as its effect on the plant. Children should understand that beer and bread make a poor breakfast, for school children in particular.

Additional instruction should be given with reference to tobacco. The effect of its smoke on bugs offers an opportunity to give a new turn to the interest of the child in the effect of tobacco. The teacher may explain that the florist burns tobacco stems in the greenhouse to kill the insects that get on the plants; when the smoke is sufficiently thick, the florist goes out; the bugs are unable to escape from the poison, for their legs are too short, and moreover they haven't the intelligence to leave. Cigarettes are made of tobacco, and they poison boys in about the same way that tobacco

smoke kills insects. Emphasize the fact that tobacco is chiefly harmful to the growing child. An academic discussion of alcohol and tobacco — particularly tobacco — should be left to the upper grades.

The teacher will find it of value to read over the work outlined for the preceding grades.

Second Year — First Term

Central Topic: *Child Hygiene in Other Lands*

First week.	The Eskimo Child's Home
Second week.	Ventilation
Third week.	Sleeping Conditions
Fourth week.	Keeping Warm
Fifth week.	Cleanliness
Sixth week.	Food
Seventh week.	Health and Sickness
Eighth week.	Accidents
Ninth week.	Exercise
Tenth week.	The Indian Child
Eleventh week.	The Indian Child (continued)
Twelfth week.	The Chinese Child
Thirteenth week.	The Chinese Child (continued)
Fourteenth week.	Children of Holland
Fifteenth week.	Children of Holland (continued)
Sixteenth week.	The Arabian Child
Seventeenth week.	The Arabian Child (continued)
Eighteenth week.	The Importance of Wise Habits of Hygiene

The lesson outlines in hygiene for this term have been developed largely from a study of the American child's interest in the stories and pictures of children in other countries. An effort has been made to stimulate the interest of the child in health matters by drawing lessons from the strange conditions under which children of other lands live. Stories about the Eskimo child, the Indian, the Arab, the Japanese, the Cliff Dweller, and the Dutch boy, as well as tales about the children of other interesting countries, are common in the books for the second grade, and present almost unlimited opportunity for teaching hygiene. The following topics

are sufficiently interesting to the average child of this age to warrant discussion in the classroom:

1. The homes in which children of other countries live.
2. The ventilation, heating, and sanitation of these homes.
3. The sleeping conditions of foreign children.
4. The kinds of food that children of distant lands eat.
5. The accidents that happen to these children, their play life, and their health.

Using such a plan as the basis of the lessons, the teacher may develop the subject somewhat as is suggested below for the Eskimo child.

FIRST WEEK

The Eskimo child's home. Point out that the Eskimo usually lives in a tent during the summer, and in a hut during the winter. The Eskimo, who moves about, makes his home of ice blocks with a tunnel entrance so small that he has to crawl on all fours in order to enter. Point out that usually homes of this kind are poorly lighted, the windows are unsatisfactory, ventilation is poor, and the space to play in during stormy weather is very small. Compare this type of home with the average American home and explain why light and sunshine and fresh air are necessary to health.[1]

[1] In making use of the interest which children have in the activities and living conditions of other children, the fact must be remembered that these unusual customs are often the result of an environment that makes them necessary; for instance, the most imperative need of the Eskimo in winter

Health, the teacher must remember, is to be thought of as more than freedom from infectious diseases. There are many persons who are not well and yet have none of the germ diseases. Health, in its larger sense, should mean (1) freedom from diseases due either to animate agencies, such as human, animal, or insect carriers of disease, or to inanimate agencies, such as mechanical, physical, and chemical conditions, and (2) abundant vigor and vitality, with all the physiologic processes functioning properly.

SECOND WEEK

Ventilation. Call attention to the fact that the windows in the Eskimo's winter house are made of slabs of ice. Show that this arrangement prevents the entrance of sunlight into the home. Point out that windows should be so arranged that they can be opened for the proper ventilation of the room. Explain that this is particularly important in the sleeping room, and in rooms where many people remain for any considerable time. The lungs get "thirsty" for fresh air just as the throat gets thirsty for fresh water.[1]

is protection from cold, and this he must secure even at the cost of other hygienic needs. The matter of education and degree of civilization also comes in; the Eskimo has not advanced to the point of conquering all the difficulties of his environment. In teaching hygiene through the use of illustrations taken from the habits of other people, care must be taken not to cultivate a spirit of self-righteousness or a tendency to assume that the different custom must always be an unintelligent custom.

[1] Thirst for air and thirst for water are sensations projected to the lungs and to the pharynx. The common theory is that these sensations are originated in the cells of the body, although there is some difference of opinion as to their physiological and psychological foundation. Dr. W. B. Cannon of the Harvard Medical School, however, believes that thirst is a sensa-

Draw attention to the fact that the air in all poorly ventilated rooms is second-hand air exactly as used clothing is second-hand clothing. Ask the pupils why the windows are raised during physical exercise, sweeping and dusting, etc. Explain that windows must be lowered at the top and raised at the bottom in order to secure the best natural ventilation. Cross ventilation (windows open on two sides of the room) also is effective.

The Eskimo lives under conditions which in this country would be prejudicial to health. He is able to live in spite of these conditions rather than because of them. There is less exposure to infectious diseases in the arctic zone because people do not collect in such large gatherings as here. Infectious diseases are spread along the lines of travel.

Are *you* employing sunlight and fresh air in your health campaign? Do you realize that "germs, like criminals, prefer the dark, and work best in crowds"? Do you try to have all pupils leave the room at recess time so that the room may be properly ventilated? Does the janitor clean the erasers frequently enough to avoid an undue amount of chalk dust in the classroom? Unless you realize that ventilation aims at

tion of local origin, the important factor being the drying of the mucous lining of the mouth and pharynx. The smallest living unit of the body is called a *cell*. Individual cells are too small to be seen without the aid of a microscope, but many of one kind, grouped together in tissues, can be seen as cartilage, hair, nails, fat, muscle, bone, nerve, and blood. Cells take in food, water, and oxygen; make use of their food according to the special function of the cell; eliminate waste products; and in many cases reproduce themselves. Many of the cells are located in the interior of the body and make known their physiological needs indirectly, through the nervous system, so that we experience sensations of thirst, hunger, fatigue, etc.

the removal of the mechanical causes of disease, such as irritating dust, as well as at the removal of used air, the prevention of heat stagnation, and the supplying of fresh, moist air, your efforts to safeguard your own health and the health of your pupils are likely to be inefficient.

THIRD WEEK

Sleeping conditions. Have any of the pupils ever made a snow house large enough to permit them to crawl inside? Question them as to the number of rooms, and whether they would like to sleep in a snow house. Would it be close quarters? Cold? Do they think the Eskimo suffers from cold in his "bedroom"? Explain that the bedroom is usually the only room there is in an Eskimo house. White men find the inside of the Eskimo's house very stifling. It is often from 75 to 90 degrees Fahrenheit. Discuss the relative merits of a moderately cool bedroom and a hot, poorly ventilated bedroom.

Discuss night clothing. Explain that clothes worn during the day need airing at night for the same reason that bed linen needs airing during the day.

Inquire how many hours of sleep the children have. Children from 5 to 7 years should have at least 10 or 12 hours of sleep.

Do you realize that nervousness is one of the common troubles with teachers? And do you realize that your nervous energy is largely stored up during sleep? Do you belong to that class of "health spendthrifts" who use nervous energy faster than it is stored up? Teachers are paid to teach hygiene: it will pay them to practice hygiene.

FOURTH WEEK

Keeping warm. The Eskimo heats his home with a lamp, and the burning of the lamp uses up oxygen necessary to health. Explain that as very little fresh air enters the living room, the room becomes quite warm and almost suffocating to one unaccustomed to the condition. Point out that many homes in this country also are too warm during the winter. Discuss the effect of living in overheated homes on the health of the individual. As a predisposing factor in catching cold, foul air is of far greater importance than cold air or drafts. Explain that the body's resistance to colds is weakened by living and sleeping in rooms warmer than 68 degrees Fahrenheit. Tell briefly the way in which colds are contracted. Discourage the practice of wearing mufflers. Encourage all children to remove sweaters when indoors. Try to make it the custom for boys to remove their jackets when indoors; the practice has a desirable effect on the cleanliness of blouses, besides other hygienic values.

Do you make regular readings of the thermometer during the winter? Do the findings mean anything to you? Your thermometer may register 68 degrees Fahrenheit, and yet the air may be unsuitable for study or play. Watch both the thermometer and the mental alertness of your pupils. Read up on the subjects of humidity and heat stagnation.

FIFTH WEEK

Cleanliness. During the winter the Eskimo child has difficulty in keeping clean. Explain that it is

not so easy to secure water for bathing purposes in Greenland as it is in this country; the Eskimo has to melt snow or ice in order to secure water, and oil, which he uses for fuel, is too expensive to allow the use of much water for bathing purposes during the winter.

Mention the Eskimo practice of rubbing grease on the face and body to retain the heat. What are some of the undesirable features of such a practice? (Mention appearance and odor.) Use this fact to direct attention to the desirability in this part of the world of keeping the hands and face and body clean.

Point out that the Eskimo has no use for a doormat during the winter, because there is no mud to be carried indoors on the shoes. Discuss the use of the doormat in this country. Explain that cleanliness of the home is just as desirable as cleanliness of the body and clothing.

Do you teach cleanliness at every opportunity, or are your efforts to develop health habits confined to the short period of instruction in hygiene? Do you have morning inspection regularly, and call attention to cleanliness of the hands, face, and clothing, proper care of the hair, condition of the floor space under the seats and desks and of desk tops, general appearance of the interior of the desk, condition of the books, pencils, etc.? Do you teach the importance of keeping the teeth brushed, and the nose and mouth clean? Have you given the pantomime tooth brushing drill recently? Are you using the blackboard to illustrate your lessons? See the suggestions given in the General Suggestions on page 93.

SIXTH WEEK

Food. Eskimo children eat more than children of this country. They must eat a great deal to keep their bodies warm during the cold winters. Their food consists of meat, blubber, eggs, plants, berries, milk, and fish. Explain that they get milk from reindeer, and that the eggs they eat are bird's eggs. Discuss the kind of food that is best for growing children. Emphasize the importance of having plenty of clean milk, cereals, soft-boiled eggs, ripe or cooked fruit, vegetables, meat (not more than once during the day), and fresh fish. Explain that foods decay more readily in the summer because germs grow best during the warm weather.

Point out that it is always "summer heat" in the mouth. Emphasize the fact that it is advisable to brush the teeth after each meal, so that there will be no food left between the teeth for germs to live on.

The Eskimo usually has good teeth. When he gets old his teeth are frequently worn down to the gums. There are very few, if any, dentists in Greenland or Labrador. This is also largely true about doctors and nurses. Call attention to the advantages the American child has over the Eskimo child.

Do your own eating habits give you reason to reflect upon the thought that "Quick lunches are apt to result in slow funeral processions"? Digestive trouble incapacitates so many of our best teachers that its importance should not be underestimated.

SEVENTH WEEK

Health and sickness. The Eskimo children used to rub noses with each other when they met. It is

said that this custom still continues among the uneducated tribes. Have any of the pupils an idea why the practice has been discontinued? Explorers have reported cases of a mother using her tongue to wash her child's face. What do the pupils think of such a practice? Explain briefly about germs and the common ways in which they are distributed. Point out the danger that results from the practice of careless spitting and coughing. Explain why the school physician and the school nurse make regular visits to the classroom (if such a system is in operation). Encourage the children to report sickness promptly.

Are you receptive in your attitude towards preventive medicine, or is your vision limited to that of the ancients, who believed in the Three Fates? What steps have you taken towards the discovery of physical defects or contagious disease in the children? Are there any cases of malnutrition?[1] Has anything been done about following up these cases? Are you definitely planning to turn the children over to their next teacher at the end of a year in as good physical condition as when they first came to you — or better — or are you leaving this important matter of health to chance?

[1] Malnutrition is not confined to children of poor families; cases are found in the families of the well-to-do as well as in the homes of the poor. Look to other causes than poverty in cases of malnutrition that can not be explained on the theory of insufficient food. Factors to be considered are: ignorance on the part of the parents, disease, defective physical condition of the child (adenoids, diseased tonsils, etc.), lack of sufficient rest, poor teeth, the use of stimulants (tea or coffee), overwork (at school or at home), and hereditary influences. In certain localities the possibility of hookworm and tuberculosis should be given special consideration.

Unfortunately there seems to be no way at present of estimating a teacher's value in the field of preventive medicine as applied to her duties in the classroom. It is quite as urgent for educators to know this as it is to know what success a teacher has in passing her pupils in the regular work of the curriculum.

EIGHTH WEEK

Accidents. Encourage your pupils to discuss the accidents that might happen to Eskimo children. Call attention to such accidents as knife cuts, dog bites, and injuries to the ear or the eye from stones and snowballs.

Teach the prevention of accidents by calling attention to the ways in which children are injured. Explain how a bean-blower or an air rifle or a sling-shot may cause serious injury. Using a wand or a pointer, teach the class how to hold an air rifle. Point the "rifle" at some pupil and have the class criticize. Pretend to look into the muzzle of the "rifle" and ask for criticism. Caution the class about the danger from pushing or tripping other children, particularly on the stairway. Ask why fruit skins left on the sidewalk should be kicked into the gutter. Emphasize the danger from playing with matches and playing around fires. Review the lessons on accident prevention taught in the lower grades.

Remember that "accidents are caused; they don't just happen."

Use the material suggested here, together with whatever material you may collect elsewhere, to teach accident prevention every time you see an opportunity.

The subject is too important to confine it to this one lesson.

NINTH WEEK

Exercise. Show the class some pictures of Eskimo children. Call attention to the fact that they are usually small and fat. Do these children look as if they had the benefit of regular classes in physical training? Are their heads erect, their chests high, and their shoulders straight? Tell about the favorite sports of Eskimo children: coasting, wrestling, playing with bow and arrow, rolling down hill, and playing games. Point out the danger from coasting in the street, hitching the sled to wagons, and playing games in the street. Explain that children and grown people exercise for health and strength and pleasure.

Does the physical education system in your school provide for a play period each day? Do you know how to conduct a recreation period indoors in case of inclement weather? Have you any story plays or simple folk dances that will interest children of this grade? Do you plan to have frequent physical relief drills each day, at which time you see that the room is properly ventilated? Do you exercise with the children? You should; unless you take the spirit and health and fresh air of the playground into your classroom, you are failing in one of the essentials of health education.

TENTH AND ELEVENTH WEEKS

The Indian child. In making use of the child's interest in children of other nations, the teacher must keep in mind that always, from the days of the ancients

(as witness the training of the Persians in the heroic period, Greek children in the days of the Olympic festivals, and especially the Spartan children), people have understood that boys and girls need wholesome food, sufficient exercise in the open air, and plenty of sleep to make them grow up healthy and vigorous. What nobody knew until only a few years ago, what is not known even now outside of the most civilized countries, was how to avoid infectious diseases. It is important that the teacher emphasize this idea in contrasting the health habits of children of different countries, and bring out the greater security that people can now have as a result of the advances which preventive medicine has made.

It has not seemed necessary to develop the next few lessons in detail in view of the fact that the outline suggested for the study of the Eskimo may be used here with slight modifications.

The following matters of interest in the life and activities of the Indian child may be used to review the main points in the prevention of disease and in the acquisition of strength and vigor.

1. Description of the Indian. Perhaps some child has seen Indians in a circus, or on the reservation; in some parts of the country Indians are often seen on the streets. Some tribes retain their native costume. If no one has seen an Indian, have him described from picture books. The Indian is tall, stands straight, has powerful muscles and a broad chest.

2. Why the Indian is strong. Explain that Indians who have taken up the white man's customs frequently lose much of their physical strength. Tuberculosis

kills many Indians who have tried to give up their native ways and live indoors.

3. Courage. Indians are noted for their courage and endurance of pain.

4. Athletics. Indians are splendid runners and wrestlers.

5. Skill. Discuss the Indian's skill with bow and arrow, rifle, tomahawk.

6. Duties of Indian women. The women provided most of the food. For meat the Indians depended on the men's skill as hunters, but it was the women who grew the corn and gathered the roots and berries that furnished the food elements not found in meat. It was they who preserved meat and dried vegetables for the long winter. They made the garments and sewed the skin tent coverings that protected the people from the weather.

7. Medicine man. The Indians believed that sickness was due to evil spirits that entered the body. The medicine man tried to drive the spirits away by his incantations. Contrast this with present-day methods of treating sickness.

The Indian has learned from sad experience that he must adopt the new ideas regarding health if he is to compete with the white man. Without the practice of intelligent personal hygiene, Indians rapidly fall victims to disease, especially tuberculosis.[1]

[1] Tuberculosis has become almost as great a social problem as it is a medical problem. It is associated with unsatisfactory social conditions, such as insanitary living and working conditions, long hours and hard work, improper food, and use of alcohol. The prevention of tuberculosis can be secured only through an improvement in the hygienic, social, and economic condition of the individual.

TWELFTH AND THIRTEENTH WEEKS

The Chinese child. The shortest way to get to China—dig a hole right down through the earth, and there you are!

Describe the Chinese boy: slant eyes, flat nose, yellow skin, long trousers, shoes with felt soles. Tell how he dresses in winter — in thickly padded clothes. Discuss the practice of strapping the feet of girls when they get to be about three years old, — an instance of what can be done by constant training, though in this case for a mistaken end. Finger nails are kept long as an indication of high social position.

The homes have paper windows; doors are always open (to close the door suggests that something secret is taking place inside); many turns are needed to get into the inner rooms (it is believed that evil spirits go only in straight lines).

Sports. The Chinese children fly kites, play games, wrestle, run, and jump much like other children.

Diet. Rice takes the place of wheat with the Chinese. They have learned how to live well on comparatively cheap foods. The poorer people get very little meat to eat, but they have several kinds of beans that give them the food elements we get from meat. For green vegetables, they have many of those that we have; they eat green bamboo shoots, too. Discuss their fondness for tea; make the point that the national habit of tea-drinking is really a health habit, for the Chinese do not have a satisfactory system for supplying pure drinking water. Many would be taken sick with serious intestinal diseases if they should drink "raw"

water. By boiling this water for tea, a safe drink is secured. Discuss use of chopsticks.

FOURTEENTH AND FIFTEENTH WEEKS

Children of Holland. What does the class know about the children of Holland? Discuss their country, clothing, shoes, play, work. Have pictures if possible, to give added interest to the lesson. Holland, with its dikes, windmills, and canals, is full of interest to children. Many have heard the story of "Hans Brinker and the Silver Skates," and know something about St. Nicholas. Dutch children wear two pairs of socks when they have wooden shoes on. Shoes are taken off indoors. Leather shoes are now being worn a great deal, except by the peasants. Most of the drinking water is rain water collected in cisterns. Necessity for cleaning the cisterns. The cleanliness of the Dutch is proverbial; cleanliness seems instinctive in some people, and the Dutch women have made it almost a fetish.

SIXTEENTH AND SEVENTEENTH WEEKS

The Arabian child. Approach may be made through the pupils' interest in the acrobatic abilities of the Arabs. Can any of the class turn a somersault, or stand on his head? Arabs are tall, muscular, agile, brave; they are splendid horsemen. It is said that deformed or dwarfed Arabs are rarely seen. Give a lesson on posture. Arabs are clean in their personal habits. They always wash their hands after eating, if possible. They have splendid teeth. Speak of the limitations of diet due to desert conditions; impor-

tance of the date palm; scarcity of water. What kind of bread do Arabs make?

Many Arabs shave the head on account of religious belief. Discuss the care of the hair. Show pictures to illustrate the costume. Why do Arabs have the head covered? Sandals are worn more than shoes. Discuss hygiene of the feet.

EIGHTEENTH WEEK

The importance of wise habits of hygiene.[1] Discourage such habits as picking the nose, picking sores, putting the fingers or a pencil into the mouth, wetting the finger when turning pages, using the coat sleeve for a handkerchief, making the ears "pop" by blowing the nose, biting the finger nails, coughing and sneezing in other people's faces. Explain why these habits are unwise and objectionable. Substitute the positive habit of doing the hygienic thing in order to be a good citizen for the negative habit of avoiding unhygienic practices in order to avoid disease. When advisable the desire to gain the teacher's approval may be used as a motive.

[1] See *Health Essentials for Rural School Children*, by Dr. T. D. Wood, Chairman of the Committee on Health Problems of the National Council of Education.

Second Year — Second Term

Central Topic: *Hygiene through Fiction and History*

First week.	The Boyhood of Robinson Crusoe
Second week.	Crusoe's Life at Sea
Third week.	Crusoe Shipwrecked
Fourth week.	After the Storm
Fifth week.	Crusoe's Castle
Sixth week.	Hygiene in History (Voyage and Landing of the Pilgrims)
Seventh week.	The Settlement of the Pilgrims at Plymouth
Eighth week.	The Homes of the Pilgrims
Ninth week.	The Health of the Pilgrims
Tenth week.	Accident Prevention
Eleventh week.	Hygiene through Fairy Tales (Cinderella)
Twelfth week.	Cinderella's Duties
Thirteenth week.	The Transformation
Fourteenth week.	Hygiene through Fables (The Wind and the Sun)
Fifteenth week.	Hygiene through Nursery Rhymes
Sixteenth week.	Personal Hygiene
Seventeenth week.	Review
Eighteenth week.	Review

Hygiene and fiction. The teacher's opportunities for indirectly interesting her pupils in the practice of hygiene increase as the children advance through the grades. In the second grade we find a keen interest in stories of adventure. Some of these stories the children learn from their reading lessons; others they are told by their parents or by their teachers. However the hero stories may be acquired, the child's interest in them can be easily capitalized as an approach to the study of hygiene. In a similar way the teacher can capitalize the child's interest in history

and use it to teach hygiene. The possibility of successfully using the child's interest in fables and fairy tales will suggest itself to the resourceful teacher.

The child's interest as a basis for health habits. The important point for the teacher to keep in mind is that there are unlimited opportunities for training young children in correct *habits of hygiene*, provided the attention of the child, and his subsequent coöperation, is secured through an indirect appeal to any one of his several interests. The teacher must also not forget that hygiene is to be taught in the lower grades primarily for the purpose of inculcating health habits, rather than teaching health facts. The lessons of this term must in large part review the instruction given in previous lessons, until the child's attention to correct habits of hygiene becomes almost second nature. Interest in these fundamentals is kept alive by approaching subsequent lessons from the standpoint of a new interest of the child; his life is so full of experiences and interests that instruction in hygiene can readily be introduced several times during the day without his realizing that he is having his health consciousness developed.

The lessons that follow are offered as an illustration of one method of using the child's interest in fiction as an approach to the study of hygiene. The story that has been chosen is Robinson Crusoe. If the children are not already familiar with the story, it will probably be best to tell it to them in installments, or to have some of the pupils tell it as they may know it. If the teacher prefers, some other story, more familiar to her pupils, may be substituted.

FIRST WEEK

The boyhood of Robinson Crusoe. How many children know the story? Have any children ever played Robinson Crusoe? Let some pupil tell the story of Crusoe's boyhood. Crusoe often played truant from school; point out that he regretted this when he grew up. Discuss some of the common reasons why children are late or absent from school. Call attention to the amount of school time lost through sickness and accidents and consider briefly how best to prevent this loss. Contrast the school conditions of Crusoe's time with present conditions in our schools, calling attention to the importance of health inspection and physical training in the schools of today.

Crusoe spent much of his time on the wharves. Point out that boys who play truant and associate with older boys who also are truants, or with men who loaf about, usually form bad habits. Explain what a habit is. Discuss briefly the habits that many boys might form who followed the life of Robinson Crusoe: smoking, profanity, intemperance, late hours, and dishonesty. Explain that in all probability the hero of our story escaped these habits, for his battle for life at the time of the shipwreck shows him to be the possessor of great health and strength. Picture Crusoe as a strong boy and point out that every boy and girl should be prepared to battle for life if necessary. Such a battle might be against the elements or against accidents, animals, or disease. Explain that the soldier's greatest battle is frequently with ill health. The "Robinson Crusoe" children in the class are the children who

are able to fight successfully against ill health, success consisting either in avoiding it or in recovering from it quickly and completely.

The teacher should select the material that seems to her most useful for the limited time given to health instruction. There is more suggested here than can be used in a single period, but it is hoped that the teacher will have sufficient interest in the subject of hygiene to make use of all the material at some time during the week. It has already been pointed out that it is necessary to keep the subject of health constantly before the pupils, if any really practical results are to be expected.

SECOND WEEK

Crusoe's life at sea. Have any pupils in the class ever been on the water? Let them describe their experiences very briefly. Point out that Crusoe probably suffered from such hardships as exposure to cold and wet while performing his duties as a sailor. Review briefly the causes of colds and emphasize the importance of warm, dry clothing in the winter. Point out also that colds are caught in the summer as well as in the spring, fall, and winter, because the germs are present all the time. Health habits to observe in fighting colds: proper ventilation and heating of living and sleeping rooms; cleanliness of body and surroundings; guarded coughing and sneezing; simple diet; regular elimination of wastes; regular rest and exercise.

Crusoe had neither fresh water nor milk when on shipboard and no fresh vegetables. Explain that germs cause food to decay, and that unless food is kept away from insects and on ice, it soon becomes unfit for eating.

Stimulate interest in ventilation by calling attention to the fact that Crusoe was forced to sleep in the hold of the ship where the air was "dead." Call attention to the fact that such a place would be a poor place to be sick in, because of the bad ventilation and the absence of sunlight. Contrast the air below deck with that on deck. Explain that the air at sea is very free of dust and therefore is the best for breathing. Air in the neighborhood of certain industries may be made unfit for breathing by smoke, poisonous gases, irritating dust, obnoxious odors, etc. Question the class about home ventilation.

Are you able to point to the cleanliness and the ventilation of your classroom as examples for the pupils to take home? Do you ventilate your classroom during physical exercise, at recess, and before the hour for music? Is the janitor work in your classroom done before or after school?

If you are afraid of the effect of drafts on the children, have the class face the windows for exercise, or give them rapid marching. The latter is helpful because the moving bodies cause the air in the classroom to circulate in every direction, which results in quick and effective ventilation.

THIRD WEEK

Crusoe shipwrecked. Have any children ever seen a life jacket? Explain briefly the different methods employed to save life at sea. Call attention to the fact that these methods of saving life are the result of recent inventions and were unknown in the time of Crusoe. What do the pupils think the sailors placed in

the life boat? Point out the importance of food, water, clothing, a compass, firearms, medicine, and matches. What does the class think about the need of whisky?

Tell about the sinking of the *Lusitania* and call attention to the law of the sea that women and children must enter the life boats first. Explain that a similar code should prevail on land in case of accident. Show that courtesy also requires this practice.

What did Crusoe do after the shipwreck? Caution the pupils not to try to learn how to swim and not to venture out in a boat or on the ice, unless some capable grown person is present to assist in case of accident. Contrast the life drill at sea with the fire drill in school.

Have you used this lesson to stimulate thought about the desirability of having health and strength for emergency, and for helping others in need? Are you making an effort to train your pupils for citizenship in the full sense of the word? Have you taught them what it means to "stand straight, look straight, and be straight"?

FOURTH WEEK

After the storm. Have any of the children ever visited the seashore when the waves were coming in big enough to cast driftwood and seaweed up on the beach? Were there any lighthouses off the coast? Explain that lighthouses and buoys are employed to warn sailors of danger and to show them where safety lies. Develop the thought that our nervous system is a "lighthouse" that warns us of sickness or injury. Name some important signals that we receive: headache, eye and ear

ache, sore throat, sick stomach, chill, fever. Point out the importance of having every child tell his parents when he is feeling ill.

Return to the story of Crusoe: what dangers did he face when the waves cast him on the shore? Review the subject of colds. Other dangers that Crusoe faced: wild animals, cannibals, starvation. Crusoe needed rest after his battle for life: point out the importance of sleep, especially for growing children.

Are you continuing the plan of holding morning health inspection every day? Have you learned to recognize in every cold the possibility of whooping cough, measles, and diphtheria? Do sore throats suggest to you the possibility of diphtheria and scarlet fever? Do swollen glands in the neck suggest to you the possibility of mumps? Consider also the fact that you are concerned with the securing of health and vigor for every pupil as much as with the prevention of infectious disease. The sick child is a menace to other children that must be guarded against. But the child with physical defects (defective vision, hearing, breathing, etc.) needs something more than protection from infection. He is constantly handicapped in his fight for health, regardless of whether he is exposed temporarily to one of the contagious diseases. His safety is not secured simply by isolating sick children; it requires intelligent and thorough follow-up work on the part of the school physician, the school nurse, the teacher, and the parents.

FIFTH WEEK

Crusoe's castle. How many of the children have lived in a tent? How many have built a house in the

back yard, or perhaps a hut in the neighboring woods? Allow one or two to tell their experiences. Try to select those whose experiences promise to be most interesting. Have any children slept overnight in a tent or a playhouse? Point out that usually many of the conveniences found at home for promoting health are absent in camp life, unless the person in charge of the camping party makes special provision for them. Does this appear to be true of the children's experiences?

Crusoe had little opportunity for furnishing his castle with the things we usually consider essential to health and comfort, because he was limited in his choice to what he could save from the wreck. If there had been a drug store on the island where Crusoe was shipwrecked, what things do you think he would have bought for his castle, that is, things that would make it easier for him to keep well? Call attention to the importance of having a toothbrush and tooth powder or paste, some soap, antiseptics, adhesive plaster, and clean bandages. Discuss briefly your reasons for the selection. Caution the class about going to the medicine cabinet at home and taking medicine from bottles, or swallowing any of the pills. Point out that some pills look like candy, but are poison. A mistake in the bottle may mean serious poisoning or even death.

Crusoe had no scissors. How do you think he kept his finger nails from growing too long? Discuss the care of the hands. Name some of the accidents that Crusoe may have had to treat. Use this opportunity to caution the class about the common accidents that happen to young children.

Discuss briefly the preparation of food, with reference

rather to cleanliness than to the art of cooking. Point out that while Crusoe had to protect himself from such dangers as animals and cannibals, the chief danger to people in this age is from disease germs.

Have you succeeded in making these little people think of themselves as soldiers in training for a fight against disease? Make use of the cartoon method, use your class organization, such as the Steer for Health Club, and dramatize some of these incidents so that the instruction may seem real.

If it seems wise to the teacher, the plan of completing the Crusoe story in one week and then passing on to other stories of adventure may be substituted for the above outline. This plan would allow the teacher to take up several stories and perhaps would prove more effective in holding the attention of the class. Stories should be chosen to illustrate health points that were omitted in the earlier lessons.

The teacher needs to keep in mind the fact that physical strength is of uncertain value in avoiding infectious diseases. It would seem that the possession of a sound body should make it more difficult for a person to get sick and easier for him to get well. This is doubtless true in diseases like colds and tuberculosis, and it seems to be important in pneumonia cases. But in most diseases, we find the strong attacked perhaps as frequently as the weak. The point, then, is that disease prevention should be secured by blocking the avenues of disease transmission. Personal hygiene and public health supervision are most useful in this effort. Nevertheless, physical strength and vigor are exceedingly desirable in maintaining

the body at its highest point of efficiency, and contribute very largely to one's success and happiness. Physical education in its broad sense, therefore, must be recognized as an important part of training for good citizenship.

SIXTH WEEK

Hygiene in history. Health lessons may be developed from a study of history in a way similar to that employed with the Crusoe story, in which the child's interest in stories of adventure is used as an approach to the study of hygiene. The voyage of the Pilgrims and their settlement at Plymouth is an historical incident more or less familiar to the children of this grade, and it has an interest for children that may easily be capitalized by the resourceful teacher. If necessary, the story may be told to the class and the facts brought out may then be used as the foundation for health instruction.

Begin by explaining who the Pilgrims were and why they made the voyage to America. Show pictures of the *Mayflower* and contrast them with pictures of a modern ocean liner. Discuss some of the differences between the two ships, under such topics as the size of the ship, provisions for keeping food, sleeping arrangements, hospital facilities, emergency equipment for accidents at sea, the duties of the look-out, and quarantine regulations of the United States Public Health Service. These topics offer opportunity for showing the importance of proper sleeping and living conditions, fresh food and suitable drinking water, the practice of health habits in the avoidance of disease, as

well as other hygiene lessons appropriate for children of this age.

Suggest that there are dangers that children have to be on the watch for, just as there are dangers at sea that require the constant vigilance of the look-out. Point out some of the common dangers that face young children and instruct the class in the prevention of these dangers. Explain that there are some dangers the eye can not warn us of, because they are due to germs too small to be seen by the naked eye. Discuss health habits and " safety first " precautions. Call attention to the importance of using caution in crossing streets.

Point out that there are two ways for us to look at the problem of safety, that is, " safety for " and " safety from." Safety for others is as important as personal safety. Under certain conditions it is more important. Take, for example, the engineer who has the choice of jumping from his cab and saving himself from injury, or remaining at the throttle and protecting the lives of the people in the cars behind him. Fortunately for most of us, we can practice " safety for others " without paying for it with our lives. Usually the cost is but a moment's thought and care.

Science has learned a great deal about the prevention of disease in the three hundred years that have passed since the Pilgrims set sail for America. Are the pupils in your class receiving the benefit of the lessons three hundred years have taught in the field of hygiene? For instance, are you keeping in mind the fact that it is necessary to make some provision for the discharge of used air from your classroom as well as for the entrance of fresh air into it? Remember that the school

child needs fresh air for two reasons: fresh, clean air is required for breathing purposes, and cool, moist, circulating air is required for tonic purposes. One affects the inside of the body; the other affects the outside of the body. Both indirectly affect the whole body. No system of ventilation is complete that neglects either of these two essentials.

SEVENTH WEEK

The settlement of the Pilgrims at Plymouth. Tell the pupils to imagine themselves Pilgrims landing on the coast of North America and searching for a suitable place to build their homes. Direct the conversation so that a discussion may be held on topics related to hygiene. The following topics may suggest opportunity for teaching important lessons in hygiene: the kind of soil suitable for home sites; the surroundings of a home important from the health standpoint; the advantage of sufficient space outside the house to allow the sunshine to enter the rooms freely; nuisances near the home, such as unpleasant odors, smoke, dust, and noises. Make clear why homes are more likely to be healthful if the basement is dry, if there are no swamps in the neighborhood, if the sun shines into the living and sleeping rooms several hours each day, if the air is free of dust and unpleasant odors, and if the rooms are freely ventilated. Point out that germs, if forced to exist outside of the human body, would select just the opposite kind of site for their home — a place that is "dark, damp, and dirty."

Explain that the Pilgrims knew less about fighting disease than they did about fighting Indians. Call

attention to the fact that they suffered greatly from disease, and point out that in these days people watch out for their disease enemies more closely than they do for other enemies. Explain the duties of a health officer, and emphasize the obligation of observing health laws with the same readiness as the other laws of the community.

EIGHTH WEEK

The homes of the Pilgrims. Continue the lesson outlined for last week. Show pictures of the homes where the Pilgrims lived. Call attention to the absence of screens: explain why they are essential in the summer and refer to lessons about the fly and the mosquito outlined in Grade One (pages 86 to 90). The Pilgrims used oiled paper for windows; point out the importance of having all the sunlight possible enter the living and sleeping rooms. The Pilgrims used candles for lighting purposes: explain that a steady, strong light is necessary, especially for reading purposes. Review the lesson on the care of the eyes.

Other lessons that suggest themselves: ventilation, heating, and cleaning, as the Pilgrims understood it and as we understand it; the use of the doormat; provisions made by the Pilgrims for keeping food from spoiling. Apply these lessons to the proper care of the classroom, lunchroom, playroom, and lavatories.

NINTH WEEK

The health of the Pilgrims. Explain that the Pilgrim children had to use a common towel and drinking cup at school. Discuss the reasons for having the

sanitary drinking fountain and the paper towels in all public places. (What provision of this kind does your board of education make for safeguarding the health of the school children?)

Explain that the Pilgrim children never had the advantages of having a physician and a nurse make regular visits and examinations, if necessary, in all the schools. Point out that the doctor and the nurse are friends of the school children and are trying to help them avoid disease and to remedy physical defects that would otherwise handicap the children throughout life.

Many Pilgrims died from what was probably pneumonia during their first year in America. Explain that colds and pneumonia have much the same cause, and call attention to the importance of drying the feet and clothing after exposure to wet and cold. Explain that lack of nourishing food and rest, exposure to wet and cold, and sleeping in poorly ventilated rooms, all lower the body's resistance to disease.

The Pilgrims were exiles seeking religious freedom. Call attention briefly to the different kinds of freedom that people seek. Some suffer hardships of all kinds for political freedom; others have been willing to face death itself for the sake of religious freedom. Another kind of freedom that is well worth striving for is freedom from ill health and diseases. When something prevents people from living happy, contented, useful, and untroubled lives, they try to secure freedom from that handicap. One of the greatest freedoms that we can attain is freedom from ill health. How can the "span of health" be increased?

Have you continued your health club organization and the morning inspection plan? Remember that you are trying first of all to train your pupils in wise habits of health. Habit formation requires constant repetition and some measure of satisfaction in continuing the habit. Are you giving any thought toward making the lessons in hygiene interesting? Are you emphasizing the essentials repeatedly, but with different methods of approach? Do not try to cover all the material given you in these outlines at the expense of neglecting the most important factors of disease prevention: cleanliness, ventilation, wise habits of eating, sleeping, exercise, and elimination of wastes. You are expected to select from these outlines what seems most useful to you in teaching hygiene; if the field covered here is too large for the time available, use your judgment in condensing the material to fit your needs. Unless you feel free to take the initiative and use your own ideas in teaching the subject of hygiene, it will be difficult for you to attain any considerable degree of success. These lesson outlines are merely suggestive.

TENTH WEEK

Accident prevention.[1] Have the pupils tell about any accidents they have had. If the accidents de-

[1] Accidents are decreasing in industry but are increasing in public places. In the industries the employers feel their responsibility and shoulder it. In public places, where many persons congregate for pleasure or business, there is a tendency for each individual to sidestep his responsibility for protecting others from accidents, and to be concerned only with his own safety, and even this is often left to others, with disastrous results.

scribed are at all common among children, take time to discuss the ways in which the accidents might have been avoided. Discuss also, where practicable, the emergency treatment of the common accidents. Name some of the accidents that you imagine may have happened to the Pilgrim children. Opportunity to teach accident prevention may be found in discussing such conditions as the following:

1. Accidents that result from going barefoot: a bruised toe; injuries to the foot resulting from stepping on sharp stones and sticks.

2. Injuries that result from throwing stones and hard snowballs at other children (particularly injuries to the eye and the ear); careless use of the bow and arrow; and carelessness with the sling-shot, bean-shooter, and air rifle.

3. Poisoning from touching the leaves of the poison ivy plant,[1] etc., and from taking unnecessary medicine, either from curiosity or by mistake (children may mistake pills for candy).

4. Accidents that result from playing in the streets, stealing rides on the back of ice wagons and other vehicles, and playing around buildings under construc-

[1] Poison ivy has three leaflets and smooth whitish waxy fruits, something like mistletoe berries, but from an eighth to a quarter of an inch in diameter. The poisonous effect is due to an oily substance. Numerous experiments to produce poisoning from the emanations of the poison or from plants have proved unsuccessful, contrary to the common belief that one may be poisoned without coming in contact with the plant or its oil. It appears to be folly for people to try to secure immunity by eating the leaves during the fall. Soap and water should be used freely and as soon as possible after exposure. Ointments during the acute stage are very likely to aggravate the condition. See *Ivy and Sumac*, in Public Health Report, 27 February, 1920.

tion (caution the pupils about the folly of taking "dares" that might endanger life or limb).

5. Accidents that occur from playing with sharp sticks in the mouth (running with a pencil in the mouth; danger of falling and seriously injuring the mouth), running with an open knife or scissors in the hand, and holding a whistle or hard candy in the mouth while playing with other children (danger of choking).

6. Accidents that result from playing with matches or around a fire.

Be careful to avoid the mistake of attempting to discuss all these conditions at once. Do not let the instruction seem to the child to be merely a series of "don'ts." Point out that children should take heed of the dangers that attend their play, not because they are afraid of the pain that may result from an injury — that would be cowardly — but because of the danger of being crippled for life. A cripple may be as brave as one who is not crippled, but he can never serve his country at the front in time of war, and neither can he serve it so effectively in time of peace.

ELEVENTH WEEK

Hygiene through fairy tales. The following lesson outlines in hygiene have been developed from the story of Cinderella, and are intended to serve the teacher solely as suggestions of the possibility of teaching hygiene through its correlation with stories having a compelling interest for the child. If any of the pupils are not familiar with the story, tell it to the class, and then at subsequent periods during the week discuss the

different topics as outlined below. The teacher may prefer to make her own outlines and use some of the other tales.[1]

Question the class about Cinderella's duties; compare her daily work with that required in a modern kitchen. Lessons in hygiene may be found in such duties as getting the meals, cleaning the dishes and the pots, keeping the sink in a sanitary condition, taking proper care of the garbage can, and scrubbing the kitchen floor. Explain that Cinderella was obliged to use a broom made of twigs tied together. Discuss some of the difficulties of cleaning the floor with such a broom. Explain why it is desirable to avoid raising dust. Call attention to the possible relation of dust to ill health. Explain how the classroom is kept in a sanitary condition — the floor, blackboards, erasers, and furniture. Mention the importance of sweeping with a damp mixture and using an oiled cloth for dusting. Point out the proper time to sweep rooms. Emphasize the importance of kitchen hygiene. Hygiene of the school lunchroom.

TWELFTH WEEK

Cinderella's other duties. Ask several pupils who takes care of their hair. Point out that Cinderella took care of her own hair and also took care of her sisters' hair. Ask the pupils why they comb their hair. Explain that there are other reasons for giving the hair attention before coming to school, besides that of appearance. Speak of the importance of washing

[1] See also *Cho Cho and the Health Fairy*, illustrated health stories distributed by the Child Health Organization, New York.

the scalp and hair at frequent and regular intervals. Explain that the scalp will become unhealthy unless the dirt and dandruff that collect are removed by washing, brushing, and combing. Warn the class of the danger of catching cold in the winter if the hair is not properly dried after washing. Call attention to the importance of giving the hair proper care in order to avoid getting head lice. Mention the desirability of having a comb and brush of one's own.

Do you make any inspection of your pupils for head lice? Do you make your examination privately and unknown to the child? The inspection is made preferably at the time of a general examination given by the school physician or the nurse, but it may be made as part of a morning inspection for general cleanliness and evidence of disease. You should be suspicious if a child scratches his head frequently or is careless about the condition of his hair, or if grayish white nits resembling dandruff are present on the hair. Occasionally the child sitting behind a pupil with pediculosis will call your attention to the condition. Many children, particularly the girls, are quite skillful in concealing the condition under large hair ribbons and braids of hair. The examination should be made particularly thorough behind the ears. Nits (the eggs that head lice lay) can not be removed from the hair by brushing them off as dandruff may be removed; they are attached to the hair and require special treatment before they may be readily removed. The teacher must remember that every nit that remains in the hair is likely to hatch into a louse, unless care is taken to kill the eggs. While it may be no disgrace to harbor head lice

temporarily, it certainly is a disgrace to give them permanent asylum. Washing the hair in strong soapsuds to which kerosene has been added (about a tablespoonful to a pint of soapsuds solution) is effective in killing the head lice. (Keep away from the fire while this solution is being used.) The eggs, however, may remain alive, and it is necessary, after removing the lice from the hair with a fine-tooth comb, to soak the hair in a weak solution of vinegar. This dissolves the glue that attaches the egg to the hair and makes it possible to remove the eggs by thorough combing and washing. The cap or hat that has been worn should be subjected to heat, or thoroughly cleansed in some other way. If convenient, the lining should be removed and boiled.

THIRTEENTH WEEK

The transformation. Review the story of Cinderella's experiences on the night of the ball. The fairy godmother gave her magic gifts; but she told her to go home early or she would lose the magic gifts. Make the point that the child who stays up late at night loses some of the magic gifts of health and strength.

Do you think a good fairy could find enough bold, fat rats about the average home of today to serve her needs as horses to draw a modern Cinderella's coach? Explain that rats are recognized today as carriers of disease and are kept away from our homes through every possible means. (If the teacher feels that this application of the story will have the effect of spoiling the fairy tale as an imaginative thing, it may be advisable to omit it.)

In some versions of the story one of Cinderella's sisters cuts off her toe and the other her heel, so that she can squeeze her foot into the slipper. Use this incident to point out how foolish it is to try to wear shoes too short or too tight.

FOURTEENTH WEEK

Hygiene through fables. The fable of the Wind and the Sun may be taken as an example of the use of fables in hygiene instruction. Review the story of the argument between the Wind and the Sun. Have the pupils tell which they think the more useful from the standpoint of health. Point out that sunshine is very important in securing health: it helps children to grow, kills disease germs, warms the body, and makes the world a bright and cheerful place to live in. Suggest that cheerfulness and happiness may act as "mental sunshine," and urge the children to open the windows of their minds and let this sunshine help to give health to the body. "Freckles are but little sun kisses," but caution the class about the danger from over-exposure to the sun in the summer (blistered skin and sunstroke). Point out that the wind may also be a friend of health. It changes the air and brings fresh cooling breezes. The wind helps dry the washing, cleanses the bedding when it is put outdoors for airing, moves ships that bring us food, and helps pump water for us to drink.

Explain that plenty of fresh, clean air and sunshine are necessary to health, that dust and lack of sunshine are enemies of health. If time allows, the teacher may find it desirable to review the lessons on

ventilation and cleaning of both living and sleeping rooms.

Other fables may be used in place of this lesson if the teacher has any preference. The teacher should feel a certain amount of liberty in changing the time devoted to the various methods suggested in this grade for approaching the subject of hygiene, if it seems wise to make changes. It is desirable, however, that the material offered here be given sometime during the term and be made a definite feature of the work every week.

FIFTEENTH WEEK

Hygiene through nursery rhymes. This lesson is suggested for the purpose of calling attention to the possibility of training the pupil to think in terms of hygiene. Opportunity should be given the pupil to apply his information about hygiene at frequent intervals. While the fact must be faced that children of this age are but little interested in the informational aspect of hygiene, it is equally important to realize that there is a great opportunity to stimulate an interest in hygiene by showing its application to many things that the child does.

The children are all familiar with the story of "Mary and her Lamb": ask them to find a lesson in hygiene in the story. Point out the lesson to be found in the fact that "its wool was white as snow." The lamb would never have been welcome at school (at least to the teacher) if its wool had not been clean. Discuss briefly the lesson suggested by the word "wool." Explain about the different kinds of cloth, — woolen, cotton, silk, — the origin of the different threads, the care of clothing,

cleanliness of clothing, and the danger from wearing wet clothing.

This method of teaching the pupil to think of his instruction in hygiene as valuable for other reasons than that of making his grade in hygiene can be carried much further in the upper classes. It is applicable, however, in the lower grades also, and may be used advantageously for an occasional review lesson in hygiene.

SIXTEENTH WEEK

Personal hygiene. Review lessons on cleanliness. Compare the hygiene of animals and birds with that of man. Personal hygiene is largely a matter of purposeful and intelligent cleanliness. "Nature's Cleansers" — sun, water, and wind. Spitting is not only a filthy habit, but one that helps to spread disease. Discuss briefly some of the more important diseases spread by careless spitting.[1] Explain that the cow has more reason for spitting than small boys have, and yet she keeps her mouth clean. Caution the class about playing around dumps, picking over refuse food and old clothing.

Review the lesson on posture. Remind the class that the camel and the buffalo both have a natural right

[1] Sputum from tuberculous people often contains millions of tubercle bacilli. These germs may find their way into the body in different ways, in most cases probably through the mouth as the result of infected fingers, food, milk, utensils, etc. Experiments that have been made seem to give good foundation for the belief that most tuberculous infections occur through the mouth, and that the primary infection is not air-borne transmission but saliva-borne. This does not mean that we need be less careful about the air we breathe or the health manners of our associates, but more careful about doing everything possible to prevent the entrance of tubercle bacilli into the mouth.

to a hump on their backs, but children acquire humps only through accident, disease, or laziness. Insist that children, above all, should stand straight, look straight, and be straight.

Explain that a chain is no stronger than its weakest link. (See the suggested chalk talk on "The Chain of Health," given on page 47.) Illustrate by a drawing on the board and point out that each link stands for some principle of health. If one of the links is weak (if a child is careless about some important health habit), the whole chain is weak. From your observation of the pupils during the term, you should be able to tell each pupil what his weak "health link" is. Many of the children will very naturally have the same weaknesses, such as putting the fingers into the mouth or coughing in an unguarded manner. Discussion of these particular unhygienic practices will serve to impress on the minds of the pupils the importance of having wise habits of hygiene.

SEVENTEENTH AND EIGHTEENTH WEEKS

General review. If time allows, have some of the pupils give a health playlet as part of the exercises at the close of the term. Places in the cast may be assigned on merit. For material, see the Health Playlets published by the National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second Street, New York.

THIRD YEAR

General Suggestions

With the third year definite instruction in hygiene, as such, may begin. The aim, however, must still be to form habits rather than to impart information.

Health clubs. The competitive spirit in children can be turned to good account as a means of keeping up interest in the establishment of wise habits of hygiene. Let each row in the classroom become a separate unit and develop the "team" spirit. Have the pupils select names for their teams, with the help of the teacher, that will be significant of some principle in hygiene, such as "The Red Bloods," "Careful Eaters," "Ever-cleans," "Safety Scouts," "Toothbrush Squad." Credit points may be given to a team when any member reports certain unhygienic conditions and practices observed in a member of some other team; credit may also be taken from the record of the team reported on. Conditions for the reporting of which credit may be given are the following: wearing rubbers indoors, putting fingers into the mouth, chewing pencils, unguarded coughing or sneezing, and failure to possess a handkerchief.

If the teacher makes use of the plan for allowing credit on a team's score in hygiene when cases of faulty hygiene are reported on the other team, it should be understood that this form of reporting is in no sense dishonorable or unworthy of the best traditions of boys and girls. It is advisable to have reports made on paper and collected at the close of each session. The name of the pupil making the report, the name of the

pupil reported on, and the reason for the report briefly stated — as rubbers worn in classroom, pencil in mouth, etc. — should appear on the report.

The teacher may take credit from teams if at morning inspection she finds evidence of slovenliness; or if she finds desks and floor untidy at the close of school, or books with torn pages and finger or pencil marks, at the close of the week.

Where the rows are organized into teams, the organization may be used to simplify the indoor program of physical training, since relay races between teams, stunts between selected members of different teams, and challenge events between teams or individuals can be organized easily. Credits in hygiene and physical training should be totaled for each team.

These suggestions are given merely as an indication of some possible ways of keeping the practice of useful habits of hygiene constantly before the child; there are many other ways, and each teacher must consider carefully what plan will best meet the problem as she understands it. No plan of club organization should be carried to such an extent that it becomes burdensome to the teacher or interferes with the other work of the day.

Correlation with other subjects. There are numberless opportunities for connecting the instruction in hygiene with work in arithmetic, reading, and composition. Give simple problems connected with measuring the height, span of the arms, chest expansion, distance covered in running around the room or in circling a row of seats in the relay races, etc. These records may be noted in the pupils' notebooks and other

records made later in the year may be entered for comparison.

The work in composition may well include reproduction of hygiene talks and the construction of stories based on the reading of hygiene and safety first books. *Keep Well Stories for Little Folks* will prove helpful to the teacher in teaching hygiene through the story method.

Simple experiments may be made, illustrating the health instruction which is given. Observing the fact that a wet handkerchief soon dries when hung near the stove or radiator helps children to understand that the habit of breathing through the mouth makes the mouth dry. The health inspector can give an effective lesson on the importance of keeping the fingers out of the mouth by demonstrating that he always cleans the thermometer before placing it in any one's mouth; yet his thermometer looks cleaner than most fingers do. He should pass up the aisle and compare the hands of the children with the thermometer. A demonstration of the method of cleaning the thermometer — the use of alcohol and clean cotton or cloth — serves to emphasize the importance of cleanliness. Where pupils have the habit of chewing their pencils, the teacher should consider placing the ends of the pencils in a solution of sulpho-naphthol for a moment. The ceremony, together with the odor of the solution on the pencil, is a constant reminder to the children that they are not to put the pencils into their mouths. If they do forget, the taste is sufficiently unpleasant to make a second lapse of memory unlikely.

Alcohol and tobacco. The experiments which Dr. C. F. Hodge made with the dogs, Bum, Tipsy, Nig,

and Topsy, are instructive as well as interesting to children. Explain that Bum and Tipsy were given alcohol in their food and that the other two received no alcohol in their food. Dr. Hodge found that Bum and Tipsy played less than the other puppies. They wouldn't chase balls so long, and they didn't run so far during the day; something took away their strength. The pupils should be able to suggest that the cause was alcohol. They will have pretty definite ideas why the dogs were given the names of Bum and Tipsy. Alcohol makes fat but not muscle.

The effect of tobacco poison on the "wind" offers a point of interest to the boy in approaching the subject of tobacco. Tobacco smoke irritates the lungs unless they have become accustomed to it, just as smoke from a bonfire makes one cough if much of it is inhaled. Tobacco smoke contains a poison that is not found in ordinary smoke. This poison passes through the thin walls of the lungs and gets into the blood. Cigarettes contain this poison, and their constant use makes one short-winded. Cigarettes make the lungs "weak," and alcohol makes the muscles weak; boys who use either have less speed for a short race and less endurance for a long race.

The teacher is urged to read through the sections for the preceding grades before taking up the first lesson.

Third Year — First Term

Central Topic: *Cleanliness*

First week.	The Meaning of Cleanliness
Second week.	Hygiene of the Face and Hands
Third week.	The Hair and Nails
Fourth week.	Bathing
Fifth week.	Wounds of the Skin
Sixth week.	Clothing and Cleanliness
Seventh week.	Hygiene of the Eyes
Eighth week.	Hygiene of the Ears
Ninth week.	Hygiene of the Nose and Throat
Tenth week.	Hygiene of the Mouth
Eleventh week.	Food and Drink
Twelfth week.	Clean Habits
Thirteenth week.	Cleanliness in the Home
Fourteenth week.	Cleanliness in the School
Fifteenth week.	Community Hygiene
Sixteenth week.	Community Hygiene (continued)
Seventeenth week.	Review
Eighteenth week.	Review

It is expected that two lessons in hygiene will be given each week.

If the plan of a health club, with the splendid opportunity that it offers for successful work in connection with the morning health inspection and in the hygiene lessons, is to be carried out, as suggested on page 137, the teacher will announce at the first lesson that a club is to be formed and will ask how many wish to belong to it. As incentives to the practice of health habits, honors may be awarded and privileges granted. The pupils' interest at the club will be increased if the activities of the organization include physical training as well as health instruction. Organize the club and explain what the duties of members and officers are. Have a trial inspection.

FIRST WEEK

The meaning of cleanliness. *First lesson.* Ask if any of the pupils have told their parents about the new club. Have these pupils tell how they explained the idea of the club to their parents. Point out to the class that the chief thing the club is concerned with is *cleanliness.* Have several pupils state their ideas of what the term means.

How many pupils have visited a dentist? Have them mention his clean white coat, the clean towels, the clean instruments, his clean hands, and explain that the first lesson a dentist learns is *cleanliness.*

How many have visited a hospital? Call attention to the clean rooms, the clean linen, the clean uniforms that the doctors and the nurses wear, and explain that the first lesson the doctor and the nurse learn is *cleanliness.*

Personal cleanliness, practiced understandingly, is more valuable in the prevention of infectious disease than public cleanliness. Both are important, however, in blocking the avenues of disease germ transmission.

Second lesson. Explain that cleanliness is important because germs can not live where cleanliness is practiced intelligently. Point out that disease germs are very small living things; that they need food for life and growth, and their natural source of food is the human body; that germs have no way to move about except as they are carried by human beings, animals, or insects, are blown by winds, or are carried in food and drink; that cleanliness helps to keep disease germs out of wounds and out of the mouth and nose.

Ask how many wish to fight these tiny enemies. The best way to fight them is with clean hands, well-brushed teeth, clean food, clean air, clean surroundings, and a knowledge of the different avenues of infection which diseases follow. Point out the esthetic, commercial, and health values of cleanliness. Explain that a clean player in sports is fair to the other players. Show in a similar way that the boy who is clean in his habits is fair to other people, because he doesn't pass disease germs to them.

SECOND WEEK

Hygiene of the face and hands. *First lesson.* Ask some pupil how he feels when he gets up in the morning. Is he wide awake at once, or do his eyes feel sleepy? What is the quickest way to make one's self feel wide awake? Explain how a fainting person is revived by the use of cold water. Ask the class for other reasons for washing the face in the morning besides that of stimulation. Call attention to the hygiene of the eyes.

Name some of the things the hands do that make it desirable to wash them before eating. Call attention to the desirability of cleaning under the finger nails. Point out that dirt under the finger nails may serve as a "germ garden." Discuss some of the more common unhygienic practices observed in children, particularly those related to the hygiene of the face and hands, such as picking the nose, the teeth, or sores with the fingers. How do the pupils care for their hands — do they wash high (to the elbow), or just to the wrist? Point out that clean children are more attractive and more healthy than grimy children.

Discuss the seasonal care of the face and hands; explain that frequent use of cheap soap and neglect to dry the face and hands carefully in the winter often cause the skin to crack. Soaps cleanse by reason of the alkali which they contain. The alkali unites with the fatty substances on the skin and makes the process of washing easy. Cheap soaps contain large amounts of alkali and remove so much of the fatty material from the skin that the skin is left dry and cracks easily. Germs get into the cracks and set up an inflammation which is quite painful. The treatment is simple, consisting of washing the part in warm water, drying it, and applying cold cream or vaseline. Prevention of the condition, however, is much more sensible and is not at all difficult if good soap is used.

Second lesson. Inspection of faces and hands. Suggest that it is not enough to clean the hands and face once a week, like an automobile. Lay stress on the importance of having clean hands at lunch and other meals. Discuss the proper use of a towel; point out that the towel is designed for the purpose of drying the hands and face, not for rubbing dirt off.

Call attention to the following unhygienic habits common among children: "cleaning" the face with a soiled handkerchief, using for a wash cloth a corner of the handkerchief moistened with saliva, using the coat sleeve for a handkerchief, wetting the fingers in the mouth when turning pages, biting the finger nails, etc.

Your morning health inspection should include examination for scabies, for ringworm, and for the peeling of hands. Scratch marks between the fingers

and on the under surface of the wrists will suggest the possibility of scabies. If the school physician or the nurse makes a diagnosis of scabies, the pupil must be placed under treatment and should be temporarily excluded from school unless he wears gloves. The treatment usually advised consists in soaking the hands in hot water until the crusts protecting the itch mites have been softened and removed, after which sulphur ointment is applied. This treatment is given every night for three nights. If the treatment has been properly administered, the results will be satisfactory.

Peeling of the hands, in the absence of a history of recent ivy poisoning, burns, or exposure to irritating chemicals, suggests the possibility of a convalescing case of scarlet fever. It is not likely that the desquamating skin is infectious; but children convalescing from scarlet fever may have a discharging ear which is infectious, and the secretions from the mouth may continue infectious for an indefinite time.

THIRD WEEK

The hair and nails. *First lesson.* The teacher may introduce the subject by announcing that she is thinking of asking the school board to put up a mirror in her classroom. Ask the pupils why a mirror is needed in their room. Call attention to the use of the mirror in looking after the cleanliness of the face and scalp and teeth.

Discuss the hygiene of the scalp, pointing out the importance of cleanliness as well as neatness. Explain that dirt cannot be seen in the hair as readily as on the

face and hands, but it is nevertheless important to wash the scalp regularly. After soap has been used on the hair, the head should be thoroughly rinsed with warm water and then cool water, and rubbed vigorously. Caution the children to dry the hair thoroughly before going out of doors in the winter. Advise having some one examine the hair every week so that a chance head louse from some other child will not be allowed to take up a residence. Urge the class to use a fine-tooth comb at least once a week and to brush the hair frequently. Call attention to the importance of having clean combs and brushes. Suggest the desirability of clean hair ribbons and clean cap linings.

Discuss the proper care of the nails: how to push the cuticle back from the nails; how to cut the nails, including the toe-nails; and the correct way to clean under the nails. Caution the class not to scrape the under side of the nail with a knife, and explain why a rough surface makes it harder to keep the nails free from dirt.

Second lesson. Call for an inspection of the class, giving particular attention to the hair and the nails. Explain that cleanliness of the nails is important for two reasons: (1) the dirt that can be seen is unsightly and disgusting, and (2) the dirt that can not be seen, because disease germs are colorless and too small to be seen, is dangerous to health. The hands that look clean may not be clean from the health standpoint. It is important that hands be washed before food is eaten, regardless of whether they look clean or not. Personal uncleanliness is the most serious kind of uncleanliness.

Point out that wounds from dirty finger nails may prove as serious as wounds from dirty wire nails. Encourage the children to get all the dirt they wish on their hands during their play, but emphasize the importance of using soap and warm water freely and of cleaning the finger nails, before lunch and the other meals of the day.

Are you using the health club to assist you in your morning health inspections? If you are, do not allow your interest in the inspection for cleanliness to overshadow the importance of giving careful attention to the commonly recognized symptoms of contagious disease and to physical defects. At this time of the school year be particularly on your guard for symptoms of contagious disease. The following conditions suggest the advisability of taking prompt precautionary measures: pallor, flushed face, eruptions, lassitude, vomiting, cough, running nose, congested eyes, headache, sore throat, swollen glands in the neck.

FOURTH WEEK

Bathing. *First lesson.* Ask several pupils why they take baths. Explain that the body needs to be bathed because of the dirt that collects on the skin from external agencies. Discuss the different ways in which the face, the hands, and the body acquire dirt. Explain also that bathing is necessary in order to remove the waste matter of the body that collects on the skin; point out that some of this waste matter is oily and decomposes with the formation of unpleasant body odors, unless the body is frequently bathed. Call attention to the fact that the outside of the skin is continually wearing out; hence it is important that

the dead skin be removed by washing. When a plaster cast is removed from an arm after having been on for some time, it is found that there is a fine bran-like substance on the skin. This is the old skin that has been cast off. Discuss the tonic effect of bathing.

Second lesson. Ask what the pupils think of a boy who takes his bath regularly but neglects to change his underwear. Explain that the waste matter from the skin collects in the underclothes also and gives them unpleasant odors. Discuss the special hygiene of the feet and the armpits. Point out the fact that rubbers tend to make the feet perspire and give rise to unpleasant odors; therefore rubbers should be removed at once when indoors. Rubber boots also should be removed whenever it is convenient to do so.

Have you done anything about combining recreation with the work of health clubs? If you do not know any classroom games, ask the supervisor of physical training to teach some simple relay games suitable for indoor use. Conduct the races in heats and give credits for winning places; announce that points scored in athletics are to count on the records made in the morning health inspection. Ask if any of the pupils feel warm after the exertion. Explain that every time a person exercises, the body throws off a certain amount of waste matter (perspiration), which makes it necessary to bathe the body regularly.

Teachers who are not familiar with games for children of this age and have no convenient sources from which to secure help, should write to their state department of education for play material. Each school should possess at least one book on games and physical

education. One of the best known books on games is Bancroft's *Games for the Playground, Home, School, and Gymnasium.*

FIFTH WEEK

Wounds of the skin. *First lesson.* Have some pupil describe how he was vaccinated. Call attention to the care the doctor took to have the arm clean before scratching the skin. Have the pupils tell why cleanliness is necessary during a vaccination. Point out that the doctor used a clean bandage over the wound. Make it clear that the bandage was used to keep germs out of the wound, and not to keep the cold out. Explain that the arm was sore because poison was scratched into the wound, but make it clear that the poison had been so prepared that it would not cause serious harm. Explain that the danger comes from getting germs into the wound, and that the only way to keep them out is by keeping the wound clean. Impress upon the class the importance of keeping wounds bandaged until a clot has formed.

Tell briefly how a clot forms. Explain that the blood has substances in it which change from the fluid state into small, solid pieces like threads when a blood vessel is cut. These little threads are too small to be seen without the aid of a microscope, but nevertheless they are present, and they tangle up the very small blood cells until finally a dam is formed at the mouth of the opening in the blood vessel. This dam is called the clot.

Discuss some of the common injuries to the hands (bruises, scratches, and cuts), and suggest simple first-

aid measures to be taken. Demonstrate the method of applying a bandage to a wounded finger.

Second lesson. Explain that a (dirty) wound represents a battlefield, and that we can see the small body soldiers (body cells) fighting against enemy germs if we use a strong microscope. Point out that the intelligent general attacks the enemy before they have entered his country in large numbers. Explain that school children are generals in charge of the "soldiers" in their bodies, and that one reason for studying hygiene is to learn how to fight the germs successfully either before or after they have invaded the body. Emphasize the thought that the "soldiers" in the body fight best when they have good food, sufficient fresh air, plenty of clean water, rest, and opportunity to get rid of the impurities about them. Caution the pupils not to touch their wounds unless necessary, and then only with hands that are really clean. Wounds that are healing may become infected by picking off the scabs

SIXTH WEEK

Clothing and cleanliness. *First lesson.* Inspect the class, noting cleanliness and neatness of the clothing. Appeal to the children's pride by pointing out that soldiers have to stand inspection of their guns, clothing, shoes, and quarters. State that you expect to make a careful inspection the next day. Perhaps it will be possible to have a teacher from one of the other rooms make the inspection for you, or it would be even better to secure the services of the school physician, nurse, or physical director.

Explain that clothes keep the body warm, not by

making heat, but by keeping in the heat that the body makes. Discuss the evil of wearing too much clothing. Advise against wearing heavy neck wraps, keeping jackets and sweaters on when indoors, and neglecting to change wet clothing at the earliest possible moment.

Call attention to the importance of brushing clothing in the hall, or at least where the dust that is raised will not be suffocating. Point out that dust irritates the lungs and may occasionally carry disease germs. Study the appearance of the sunbeam and note the increased activity of the dust particles when a dry dusting cloth is shaken vigorously, or two erasers are rubbed together. Point out that blackboards are washed frequently to reduce the amount of dust in the classroom.

Review briefly the lesson on bathing, to bring out the fact that underclothing is worn chiefly to keep the other clothing from being soiled by contact with the body.

Second lesson. Ask several of the pupils to tell about their experiences while in quarantine for one of the contagious diseases. Select, if possible, examples of different diseases. Call attention to the general practice of requiring the patient to take a full bath, including washing the hair and scalp, and to put on clean clothing before he is allowed to mingle with other people. Point out other precautions that the health officer takes before releasing a patient from quarantine: laboratory tests, fumigation and disinfection of the room and contents and of the clothing used by the patient. Explain how clothing may carry disease. It is probably not likely that clothing plays an important part in the spread of disease, but it is advisable, in view of the

limited knowledge we have on this question, to teach that there is always the possibility that clothes may carry disease germs. Handkerchiefs, towels, and bed linen have to be considered always, and there are many cases on record that seem to indicate the danger of transferring disease by means of clothing. It is possible that animals also may carry disease germs on their bodies.

Emphasize the special importance of cleanliness, particularly of the hands, as a preventive measure in combating disease. Point out the fact that dirty shoes may act as carriers of disease by tracking spittle indoors, which is particularly dangerous in homes where babies are creeping on the floor. Fingers also may be infected when putting on shoes and rubbers. Discuss the importance of forming the habit of using the door mat.

Insist that common decency requires an observance of the ordinary laws of hygiene, regardless of the desire to safeguard one's own health. Discuss briefly the more important "health manners" that all well-bred people are expected to observe.

If your school is progressive in health matters, you will be able to call the pupils' attention to many conditions and regulations that show how the school officials, in coöperation with the board of health, are trying to safeguard the health of the school children and, indirectly, the health of the community

SEVENTH WEEK

Hygiene of the eyes. *First lesson.* This topic may be appropriately entered upon by testing the pupils'

power of observation. A discussion of the hygiene of the eye may easily be made incidental to the playing of classroom games. The game "Have you seen my sheep?" serves well as an introduction to the subject. If it seems desirable to employ other means, the teacher may send several pupils to the window, one at a time, and have them tell what they have seen. Other tests will suggest themselves to the teacher.

Explain briefly the structure of the eye by means of a diagram on the board. (Consult any text on anatomy or physiology.) Emphasize the fact that the eye is much more delicately adjusted than a very fine watch. Call attention to the different ways in which the eye is protected; the eyelids and their reflex action, the cleansing action of tears, the strong, bony eye socket, the fatty cushion surrounding the eyeball, the eyelashes, and the eyebrows. Suggest the thought that if Nature has tried in so many ways to protect the eyes, it is certainly important that children make every effort to help safeguard them.

Discuss briefly the hygiene of the eye, pointing out the importance of having nothing touch the eye that is dirty, such as dirty fingers, a soiled towel, or a used handkerchief. Emphasize the fact that some forms of sore eyes are contagious. Explain how the use of a public towel might easily result in serious eye infection.

Discuss the common accidents to the eye and the methods of prevention. Caution the class particularly with regard to the careless use of the air rifle, bean-blower, sling-shot, bow and arrow, firecrackers and torpedoes; also call attention to injuries to the eye that may result from being hit with snowballs or with sharp-

pointed sticks, such as are used in some games. Games of this latter type endanger the eyesight and should be forbidden on the school playground.

Second lesson. Select several textbooks that are used in the different grades and show a difference in the size of the type. Have the pupils examine the books and tell what differences they find between these books and the books used in their grade. Explain that until about eight years of age a child is naturally farsighted and should be given but little work, if any, that has to be held near the eye. Call attention to the fact that the playthings of kindergarten and primary schools are made large, and never have on them small characters or figures that would strain the eye muscles if looked at intently. Explain also that the paper used in textbooks is now made free from glazing. Point out that the eyesight is further protected by having the printed lines not more than four and one half inches long, and at least one tenth of an inch apart.

Call attention to the relative position of desk and windows in the classroom, and have the children note over which shoulder the light falls as they work at their desks. Point out that the blackboards are arranged with special consideration for the eyesight, and are so situated that the light from windows will not be dazzling.

Emphasize the fact that much of the work of seeing is done by small muscles of the eye and that these muscles become tired from over-use just as any other muscle does. If the eyes are used after fatigue sets in, the muscles may become strained and the eyesight may be seriously impaired. Discuss briefly how the

blind read. Emphasize the thought that good eyesight is invaluable.

Have all the pupils in your class had their eyes examined? Were notifications sent to the parents of the children showing evidence of defective vision? Were these pupils given seats near the front of the room whenever it was possible to make the adjustment, taking into consideration the needs of children with other defects? Have you noticed any pupils with inflamed eyelids, red eyeballs, frequent styes, discharge from the eyes, bran-like accumulations on the eyelids, or crossed eyes? Do any of your pupils hold their heads in an unnatural position while reading, hold the textbook close to the eyes (closer than fourteen inches), have difficulty in seeing across the classroom, or squint? Have they ever complained to you of blurred print, tired eyes after little reading, itching or burning in the eyes, feeling of sand in the eyes, or headache? Have your pupils been tested for color blindness? Have you realized that there is an important difference between the special qualifications of an oculist and those of an optician? Eye conditions warrant expert medical care.

EIGHTH WEEK

Hygiene of the ears. *First lesson.* One of the common schoolroom guessing games may be used to introduce the topic of hearing. In "Good morning," one child stands in front of the class with his back to the other pupils. Another child is selected by the teacher to approach to within a few feet of the first child and say, "Good morning, ——." The pupil spoken to

must endeavor to guess who has spoken. Time may be saved by having the pupils address the "guesser" from their seats. If the pupil spoken to is successful in recognizing the voice of the speaker, the two change places.

Call attention to the fact that we receive information through the sense of hearing as well as through that of sight. Discuss some of the ways in which the sense of hearing is important, as in communicating thoughts and wishes, in learning, in enjoying music, and in helping to avoid accidents.

Explain briefly that the eardrum is a thin, delicate membrane, or skin-like substance, that stretches across the passageway from the outer ear. Point out the different ways in which the eardrum may be injured, as by being punctured with anything sharp and pointed, or being ruptured by a blow on the side of the head. Ask the pupils to be prepared at the next lesson to tell what may cause earache. It is often advisable to ask the pupils health questions that they will need to take home for help in answering. If the interest of the parents can be secured, your work in hygiene will carry over into the home, where it will be exceedingly effective, especially if there is a baby in the family who has to run the gamut of childhood diseases.

Second lesson. Place a simple diagram of the different parts of the ear on the board some time before the class meets. (Consult textbooks on anatomy or physiology.) Ask the pupils what the diagram illustrates. Point out the eardrum, the small bones in the middle ear, and the Eustachian tube. Have the pupils tell what they have found out about the cause of earache.

Explain how germs travel up the Eustachian tube to the middle ear, and there cause inflammation. Show that the discharges from an aching ear usually come through an opening in the eardrum. Point out that damage to the head of an ordinary drum seriously impairs its sounding quality; explain that injuries to the eardrum may interfere with the sense of hearing in like manner. Emphasize the importance of having medical treatment for all discharging ears; it is not enough to stop the discharge with cotton. Do you know that a " running ear " will prevent its possessor from obtaining first-class life insurance? Children do not " outgrow " running ears.

Warn the children that a moist cloth applied on the finger is the only object that should be put into the ear to cleanse it, and explain the reason for taking this precaution. Teach the pupils to blow the nose into a loosely held handkerchief while pressing but one side of the nose and holding the mouth open. If both nostrils are closed by pressure, postnasal secretions may be forced up the Eustachian tube. Vigorous blowing of the nose is equally impolite and dangerous. Are there any who have forgotten to bring a clean handkerchief to school?

Do any of your pupils have difficulty in hearing the ordinary whispered voice about twenty-five feet away? Have any of the pupils an offensive odor about the head, the source of which is not apparent to you? Do any of the pupils have " running ears "? Have you observed any unexplained inattention on the part of any child? Many children with defective hearing show stupidity of countenance. Articulation may be

imperfect because clear speech is not heard. Children with defective hearing should be seated near the front of the room.

NINTH WEEK

Hygiene of the nose and throat. *First lesson.* Give the class a short, vigorous setting-up drill. At the close of the exercise call attention to the fact that many children are breathing through their mouths. Bring out the idea that the lungs require an extra amount of air as a result of the physical exercises that have just been taken. Point out that it is easier to get this extra amount of air by breathing through the mouth, but that it is better to do all the breathing through the nose. Explain that there are small hairs in the nose to filter dust and germs from the air before the air is breathed into the lungs, that the nose is so arranged that air is warmed as it passes through, and that the nose also gives moisture to the air that is being inhaled. Emphasize the idea that the best way to breathe is through the nose, although it may be permissible to breathe through the mouth when exercising violently in the fresh air.

Discuss the hygiene of the nose. Explain that the secretions that collect in the nose catch much dust and very many germs and should therefore be properly cared for. The nose should be blown as well as wiped. Mention the use of the handkerchief for coughing and sneezing as well as for blowing the nose. Explain how careless coughing and sneezing spread disease.

Second lesson. Take a health census of all pupils who had colds and sore throats last winter. Explain the cause of an ordinary sore throat and point out how

gargling is of value in preventing it. How many are able to gargle? Bring out the idea that the main use of a gargle is to wash the throat and remove the germs from the tonsils, rather than to kill the germs by the use of a strong solution. Urge the pupils to gargle with a salt solution whenever the throat feels sore. An effective and simple gargle can be prepared by adding about half a teaspoonful of salt to a glass of warm water. To serve any really beneficial purpose, gargling should be done frequently and persistently.

Explain how children catch diphtheria from other children. Caution the class that it is dangerous to put into the mouth either the fingers or any articles, such as pencils, paper, and money, that other people have handled or may have infected.

Have you taken time to familiarize yourself with the common signs and symptoms of nasal obstruction and diseased tonsils? The most common and noticeable signs and symptoms of adenoids are nasal voice, mouth-breathing, prominent and crooked teeth, earache, deafness, and "snuffles" (when more or less chronic). Mental dullness that has no apparent cause should make the teacher suspicious of adenoids. The term "adenoids" is commonly used to mean diseased adenoid tissue. Adenoid tissue is normally found in every individual, but when it becomes enlarged so that it obstructs the nasal passages or the Eustachian tube, or when it becomes diseased, the condition is abnormal and requires medical or surgical attention. The presence of enlarged glands (kernels) in the neck, a thick voice, and a history of frequent sore throats are indications of diseased tonsils.

Children with colds and sore throats should be temporarily excluded from school. They may be in the first stages of whooping cough, measles, scarlet fever, or diphtheria. At all events, sick children have no place in school; they get little, if anything, from their lessons, the health of other children is endangered, and their own recovery is delayed.

TENTH WEEK

Hygiene of the mouth. *First lesson.* Have the pupils hold up their pencils for inspection as you pass down the aisles. Note the tooth marks on the pencils and the condition of the fingers with regard to cleanliness. Point out that there are three main ways in which disease germs enter the body: through the mouth, the nose, and the wounded skin.

Emphasize the fact that most disease germs enter the body through the mouth. Have the class name the different ways in which germs find their way into the body through the mouth; e.g., in food and drink, on the fingers, on articles that are placed in the mouth, and during breathing through the mouth.

Make the point that the mouth is important also as an exit for disease germs. Point out the different ways in which germs are thrown off from the body via the mouth, as in coughing, spitting, or kissing, and on cups, dishes, and silver that come in contact with the mouth. Name some of the common diseases spread in this manner.

Describe the possible adventures of a group of disease germs after leaving the mouth in a mass of sputum. Point out that spitting is so dangerous to

public health that it is forbidden in public places except where receptacles are provided.

Emphasize the idea that it is a child's patriotic duty to practice hygiene. Before a child can grow to manhood and do his work in the world, he must first make a successful fight against the diseases of childhood.

Second lesson. Ask all children who have visited a dentist to raise their hands. Discuss the subject of toothache, and develop the idea that while simple wounds ordinarily heal without the help of a doctor, decaying teeth *never heal* unless treated by a dentist. They may stop aching for a time, but the process of decay goes on steadily.[1]

Make a list on the board of some of the different ways in which the enamel protecting the tooth is broken or decayed. Point out that decayed teeth are unsightly, they frequently give rise to an unpleasant breath, they harbor germs that may cause serious disease, they lower the resistance of the body to disease, they cause pain, and they render poor service in mastication.

Illustrate the proper method of brushing the teeth. Explain why decayed teeth should be filled. Call

[1] Dental decay results from a combination of two main conditions: predisposing causes, such as physical weakness due to inheritance or disease, and exciting causes, such as injury to the enamel by means of mechanical or chemical agents. The mouth is very well suited to serve as a hothouse for the growth of bacteria. The temperature is ideal, and in addition there is good moisture. Germs cause decay of the food about and between the teeth, with the production of acid which dissolves the mineral matter in the enamel and forms a cavity. Decay of teeth then resolves itself largely into a matter of acid formation in the mouth. This is prevented in part by proper brushing of the teeth, the use of dental floss to get in where the bristles can not go, and the use of an alkaline wash to overcome the effect of the acid. It is advisable to use the alkaline wash, especially, the last thing at night.

attention to the fact that the army will not enlist men as soldiers unless their teeth are in good condition. Point out that it is always summer heat in the mouth; that food decays quickly in the presence of heat and germs, both of which are found in the mouth; and that it is necessary to use the toothbrush at least once a day to prevent the decay of the small particles of food lodged between the teeth and the production of acid which has a tendency to cause the teeth to decay. Emphasize the fact that the six-year molar teeth are permanent teeth and should be carefully preserved. Point out that children with untreated decayed teeth are "dental cripples."

ELEVENTH WEEK

Food and drink. *First lesson.* Ask the class what would happen if the fireman on a locomotive forgot to put coal in the fire box before starting on a trip. Point out that in many respects similar results would obtain if a child failed to eat his breakfast before coming to school. Explain that the body is able to save some energy from food eaten the day before, but not enough to keep the human machine running without injury and at full speed.

It is unwise to attempt the day's work in school unless the body has been given the food that it needs for starting the day's work. Make it clear that children should eat their meals regularly for other reasons than that of pleasure. The right kinds of food, if properly chewed and digested, give the body strength for work and for defense against disease; they give it also heat and material for growth and repair

Discuss with the class what constitutes a good food. Point out that milk, eggs, bread, butter, cereals, vegetables, fruit, and meat are good foods if they are properly prepared and free from disease germs. A list of foods unsuitable for children would include rich cakes and puddings, heavy pie crust, pickles, fried foods, and highly spiced condiments. A small amount of sweets is not objectionable in the diet if eaten either at the close of the meal or long enough before meals to have no effect on the appetite. Explain that candy decays readily in some mouths and makes the use of a toothbrush doubly necessary. Pure candy at the proper time, however, is good food. Point out that the most suitable of foods may become unsuitable if not properly cared for, as when exposed for sale on uncovered stands in the streets.

Second lesson. All schools provide free drinking water. A few schools provide milk, cocoa, soup, and a light lunch at cost price or, in some cases, free of charge. Do any schools provide tea or coffee for children in the elementary grades? Lead the pupils to discuss this question. Point out that water is necessary to life and that clean milk and cocoa are nutritious, but that tea and coffee have no food value except in the sugar and milk taken with them. Create a sentiment among the pupils against drinking tea and coffee.

Discuss the different ways in which food becomes unfit for eating, as by exposure to heat (except when being cooked), to insects (flies particularly), and to dust, and by contact with dirty hands, dishes, etc. The children may wonder why heat used in cooking does not cause food to spoil; explain that warmth,

or gentle heat, is favorable to germ growth, but intense heat kills germs. Call attention to the importance of keeping milk cool and properly covered. Consider the danger of sickness from eating unripe and decayed fruit.

Point out the importance of removing food from a can as soon as the can is opened. Explain how food can be kept indefinitely if it is properly canned. Warn against eating food from cans that are swollen or eating canned food that has an unnatural odor, color, or taste. These conditions are due to imperfect sterilization and show that bacterial action has taken place, with the production of poisons. It is always dangerous to eat food in this condition.[1]

Make a list on the board of the different methods employed by merchants to keep perishable foods fresh and clean. This list might include: bread is wrapped in oiled paper; fruit is covered with netting; candy is kept in boxes, in glass jars, and in showcases; milk is kept in sealed bottles and in covered cans; fish is kept on ice; crackers and cookies are usually sold in packages; gum and caramels are usually wrapped by machinery. Call attention to the fact that these methods are employed to keep the different foods as

[1] Cases of poisoning from bottled ripe olives have been known to occur. The dangerous condition is due to the presence of the *Bacillus botulinus*, which was first discovered in sausages and has since been found occasionally in string beans, asparagus, and corn, not only in the commercial brands but also in the domestic product. There is no need for undue alarm about the danger of poisoning from any preserved foods; the point is to use good judgment in selecting the brands, to buy the best that can be afforded, and to take pains to notice whether the food smells, looks, and tastes right when the can or the glass is opened.

free as possible from contamination with disease germs. Dwell on the fact that these precautions may prove useless if a person neglects to wash his hands before touching the food which is to be eaten. Call attention to the care that is taken to keep everything clean and sanitary in most restaurants and soda fountains.

Do the children in your class have an opportunity to wash their hands before eating their lunch at school? Have you taken occasion to observe the children at lunch time for the purpose of making helpful suggestions later? These suggestions must be made tactfully, and probably in an indirect manner.

TWELFTH WEEK

Clean habits. *First lesson.* Let several members of the class state their idea of what constitutes a habit. Make a list on the board of the common habits that children have. Do not make the list solely from the standpoint of hygiene, but include habits that safeguard the body from accidents, help in disease prevention, or aid in study. Show that habits of the right kind are invaluable in everything that a person does.

Call particular attention to the habit of intelligent cleanliness, and explain what it consists of. In one column on the board make a list of the habits which the " Do Cares " practice, and in another column make a list of the habits which the " Don't Cares " practice. Encourage the pupils to help in making up the two lists. Announce that you are going to keep a record of the different unhygienic habits that you observe in the pupils. Use the competitive spirit to stimulate the

pupils to greater care in observing the fundamental laws of hygiene.

Second lesson. Discuss the unhygienic habits that you have observed in the pupils since the last lesson, and point out why these habits are unwise. Take this opportunity to call attention again to the importance of observing the simple rules of accident prevention as well as those of disease prevention. Compare the health habits of children with those of the animals, birds, and insects that have been studied in the lesson outlines for the first two grades.

The use of a club organization, as outlined in the General Suggestions for the Third Year (page 137), is undoubtedly the most effective method of developing the habits of cleanliness and orderliness in young children. In many respects this lesson is the most important lesson presented. It should be taught repeatedly, but in such a way that the motives given the child are largely based on his realization of himself as a member of society, responsible to it for the proper observance of certain laws of order and cleanliness.

THIRTEENTH WEEK

Cleanliness in the home. *First lesson.* Make an unexpected desk inspection. Have the pupils place everything on top of the desks. Pass down the aisles, make a quick survey of the desks, and discuss the conditions that you find. Make the discussion general and do not direct attention to any individual unless you think the condition warrants making a special point of it. Suggest to the children that you wonder how their homes are kept, in view of the condition

which you have found from an inspection of their desks.

Have several members of the class explain how housecleaning is done at home. Point out that the purpose of housecleaning is usually to remove dust and dirt. Discuss the different ways in which dirt gets into the house, as by being carried in on the shoes and clothing, or by animal pets and insects, and by being blown through the windows in the form of dust. Point out that " dirt " is matter out of its proper place. Explain that the kind of dirt which interests us most from the standpoint of health is that containing disease germs. Point out where this particular kind of dirt comes from, mentioning waste matter from the body and excretions from the nose and throat as the more important sources. Discuss the general principles involved in the proper cleaning of a room. Make clear the difference between simply *moving* dust (dry dusting) and *removing* it (with an oiled cloth).

Second lesson. In the previous lesson no mention was made of the special importance of cleanliness in any particular room of the house; the importance of removing dirt from the house was insisted upon because of the irritating action of dust on the respiratory tract, and because dirt at times contains disease germs. Have the pupils state which rooms, in their opinion, need most attention to their sanitary condition. As a general rule the kitchen and the bedrooms should have the most attention. Explain why these two rooms are so important from the standpoint of health. Discuss the importance of cleanliness in the cellar, explaining that it prevents the development of unpleasant odors, discourages ver-

min from living in the cellar, lessens the fire hazard, keeps the cellar dry, and in general makes the home a more healthful place to live in. Discuss briefly the special hygiene of the sickroom. Show that inside rooms are undesirable for habitation. Dwell upon the importance of sunlight, fresh air, vacuum, dustless or damp sweeping, and dusting with an oiled cloth, in making rooms healthful and attractive.

FOURTEENTH WEEK

Cleanliness in the school. *First lesson.* Have the class estimate the number of hours spent in school each day and the number of hours spent at home. Ask which of the two places needs more attention to cleanliness. Most of the pupils will think that the home has more need of attention because of the longer time spent indoors. Bring out the thought that the length of time spent indoors may be less important than the number of people living together, with consequent greater pollution of the air and exposure to disease from different sources. Show that the schoolroom, as well as the home, has its problems of sanitation. Discuss briefly the reasons why the hygiene of the school is important. Point out that while the janitor is responsible for the general cleanliness of the school, each individual, including both pupils and teacher, is responsible for reducing the number of disease germs that are brought into the classroom. Show how health manners help to lessen the number of disease germs scattered by carelessness or through ignorance.

Has your school passed beyond the stage of the common towel, basin, and drinking cup?

Second lesson. Explain to the class that all state education laws require instruction in hygiene in the public schools. Ask the children what evidence they are able to find in the school, or on the playground, that the people in charge of the school property are also required by law, civil and moral, to apply these lessons in a practical manner, as far as the financial resources of the community will allow. Encourage the pupils to point out ways in which the local board of education is endeavoring to make the schools healthful places for study and recreation.

The following list of topics for discussion is not complete; it is simply a list of subjects which will be of interest to the child because of their relation to his work in school; the discussion must necessarily be very brief.

Blackboards: materials used for boards, location of boards, dustless crayon, dustless erasers, protection against chalk dust.

Windows: location, arrangement of shades, ventilation.

School furniture: desks and seats adjustable, for postural reasons.

Supplies: books, including size of print, unglazed paper, length of lines, etc.; pencils and paper in place of the slate.

Sanitary fixtures: drinking cups or fountains, sanitary paper towels, sanitary lavatories or outhouses.

Regulations: sweeping and dusting (time and method); heating of classrooms (pupil monitors, method of reading the thermometer, humidity).

Other subjects will occur to the teacher, such as

health inspection, physical training, fresh air classes, and hygiene of instruction.

FIFTEENTH WEEK

Community hygiene.[1] *First lesson.* Do the pupils know why they were vaccinated against smallpox? Point out that the law requires people to do certain things when it appears necessary for the public health. Explain that the law against spitting on the sidewalk, in public conveyances, and in public buildings, is necessary in order to protect the people of the community from the carelessness and ignorance of others. These laws are made by the local board of health under authority given it by the people of the community.

Develop the thought that the sanitary laws of the community should be obeyed as strictly as the civil laws. Point out that the violation of many civil laws has only a limited result in its effect on other people, but violation of the sanitary laws may cause serious epidemics of disease and great loss of life. Call attention to the fact that much of the good health that most children have is due to the efforts of the local and state boards of health to lessen disease and eliminate conditions which tend to reduce vitality.

Second lesson. Locate the office of the board of health and give the name of the health officer. Discuss briefly some of the duties of the board of health: en-

[1] In Framingham, Massachusetts, an experiment in health supervision has been carried on under the general direction of the Metropolitan Life Insurance Company. Information may be secured by writing to Dr. D. B. Armstrong, Community Health Section, Framingham. A second "health town" has since been organized in Kingsport, Tennessee.

forcement of laws concerning clean food and safe drinking water; the isolation of contagious diseases; disinfection of rooms and clothing, etc., after contagious diseases; inspection of dairies, tenements, restaurants, etc.; sanitary inspection of schools; abolition of public nuisances. It is probably more important to be safeguarded from disease than from crime if protection from but one of the two dangers were possible; disease causes more misery and loss of life and costs more money than crime does.

SIXTEENTH WEEK

Community hygiene (continued). *First lesson.* Discuss the special problems of the rural communities.[1] Emphasize the importance of ventilating country homes during the winter. Explain that homes heated by airtight stoves often have no regular method of venti-

[1] It has been stated that the death rate is falling more rapidly in the cities than in the country on account of the improved sanitary conditions in the city. The health of the country school child has been found to be from 5 to 20 per cent more defective than that of the city school child. Notwithstanding the fact that the country child has the advantage of fresh air and outdoor life, 3.7 per cent of the country children have tuberculosis of the lungs while but a fraction of 1 per cent of city children have it. One third of the country children have malnutrition as against 23 per cent of the city children. Curvature of the spine is twenty times more frequent in the country child. Ear troubles are five times as frequent, and eye defects show about four times as much frequency in the country children. Marked and very important differences are found also in the prevalence of adenoids and enlarged tonsils. Dental decay is very much more prevalent in the rural districts. Trachoma and hookworm also affect the country children particularly. These health handicaps are largely due to poor sanitation, inadequate school facilities, absence of satisfactory health inspection and follow-up work in the schools, and failure to follow the modern teachings regarding personal and community hygiene.

lation. Discuss some of the reasons for the common occurrence of tuberculosis in rural districts; that is, poor sanitary conditions in the homes and poor hygienic habits on the part of the occupants. Mention the proper care of the barn, with special reference to the fact that flies breed in the refuse of stables and barnyards. The rural fly is more filthy than the city fly, because disposal of garbage and sewage is better attended to in the city. Discuss the ways in which drinking water may be contaminated when it is drawn from wells. Explain how mosquitoes breed. Discuss briefly how malaria, yellow fever, hookworm, and typhoid fever are spread.

In city schools the topic for this week may be related to the children's summer experiences.

Second lesson. Consider the relative advantages of living in a village and living in a rural district.

SEVENTEENTH AND EIGHTEENTH WEEKS

General review. Give particular attention to the lessons which seem to have been most helpful to the pupils because of special conditions obtaining in the community.

Third Year — Second Term

Central Topic: *Daily Hygiene*

First week.	The Daily Program
Second week.	Physical Exercise
Third week.	Waking-up Bath
Fourth week.	Oral Hygiene
Fifth week.	Breakfast
Sixth week.	Preparation for School
Seventh week.	Morning Inspection in School
Eighth week.	Mental and Physical Training
Ninth week.	Recess Activities
Tenth week.	Luncheon
Eleventh week.	After-school Activities
Twelfth week.	The Evening Meal
Thirteenth week.	Evening Activities
Fourteenth week.	Rest, Sleep, and Growth
Fifteenth week.	Dramatics: A Health Playlet
Sixteenth week.	Rehearsal and Review
Seventeenth week.	Rehearsal and Review
Eighteenth week.	Presentation of Health Playlet

It is expected that two lessons in hygiene will be given each week.

The outlines that are suggested for this term have been arranged with a view to discussing more fully much of the material presented during the first half of the year. The instruction in hygiene which is given to children in the lower grades must consist chiefly of a continued repetition of the more important laws. Much of the same instruction will have to be repeated each term, but it must be introduced through new avenues of approach, and should be given more in detail. Taking up entirely new topics each term is unsatisfactory, because the children in the lower grades are not prepared to discuss any single subject thoroughly

enough to finish with it. A thorough discussion requires a knowledge of anatomy, physiology, physics, chemistry, and others of the allied sciences. Therefore, the teacher must keep constantly before her pupils the main points in elementary hygiene, and from these basic principles develop new thoughts and facts about the application of the fundamental laws of health.

FIRST WEEK

The daily program. *First lesson.* As the lessons for this term are based upon the daily routine of the average child, in many cases the program may not fit the circumstances; nevertheless, it will prove helpful in providing a working outline.

Routine is one of the features of life in the army and navy. Discuss briefly the daily routine of a soldier or a sailor, and point out why certain regulations are enforced: promptness in reporting for all duty, from reveille to taps; policing (cleaning) of quarters and grounds; physical exercise in the morning; drills and instruction; recreation. From this discussion lead up to the subject of the average pupil's daily routine. Conduct the discussion so that you will be able to write down the activities given in the next paragraph as those fairly typical of the pupils in your class.

Second lesson. Review the daily routine of the pupil and write the topics for consideration on the rungs of a ladder drawn on the blackboard, the top rung of which should be "efficiency," or some equally desirable goal. Begin at the bottom rung and, as the ladder is climbed,

put down the different activities in the order in which they occur through the day. When a topic has been discussed in class in the subsequent lessons of the term, it may be written over with yellow chalk. The following topics are discussed in this term: prompt and regular rising; physical exercise; waking-up bath; oral hygiene; breakfast; preparation for school; morning health inspection; mental and physical training; recess activities; luncheon; after-school activities; the evening meal; evening activities; rest, sleep, and growth.

Make the pupils understand that it is not so much the health habits practiced occasionally as the habits practiced every day that secure helpful results. Discuss the first topic — prompt and regular rising.

SECOND WEEK

Physical exercise. *First lesson.* Ask all pupils who take exercises in the morning when they rise, to hold up their hands. Point out to those who disclaim taking morning exercises that it is the most natural thing in the world to yawn and stretch just after waking in the morning, and that this is physical exercise. Explain that the development of large muscles is not the purpose of a morning setting-up drill: its objects are quickening of the circulation, postural correction, full and deep ventilation of the lungs, physical preparation for the more active work of the day. Call attention to the desirability of taking the deep breathing before an open window.

Take time to demonstrate a few simple exercises that are suitable for use in the morning and at other

times when the muscles of the body have been inactive for some time. Such a drill will contain stretching and bending exercises, exercises that assist in securing good posture, one or two general exercises in which the large muscles of the body are vigorously exercised for a few moments, and deep breathing. If short setting-up exercises are given during the school session as part of the physical training program (and they should be), point out the similarity between these drills and the one just given for morning exercise.

Emphasize the importance of clean, fresh air. Call attention to the fact that a person who breathes the air in a poorly ventilated room that other people are in is somewhat like a person who bathes in water that other people have used. It may be as important to bathe the lungs in clean fresh air as it is to bathe the body in clean water.

Second lesson. Ask for volunteers to demonstrate their morning exercises. Call attention to the fact that growth takes place during sleep, and so each morning finds a child's body larger and his muscles stronger, provided he has had ten or eleven hours of sleep in a well ventilated room. It is this additional strength that seeks expression in stretching and bending the body. Ask the pupils to show their exercises to their parents and explain why they have been encouraged to take the exercises regularly. Point out that morning physical exercises are useful to grown people also, because their physical exercise during the day is frequently limited on account of other duties.

One of the more important lessons to be learned from this discussion is the value of a habit of morning

exercise done regularly, faithfully, and intelligently. It calls attention to increase in growth and strength, a matter in which the child is interested, and is a constant reminder that these two assets have a direct relation to the amount of nourishing food, sleep, and fresh air that he has had. The body is a new machine each morning: it should be tested out intelligently. Teach the pupils that they may keep fit for athletics and all the duties of life by adopting these six rules: exercise wisely, eat wholesome food, drink plenty of water and milk, get all the fresh air possible, take sufficient rest, and keep clean (in the full meaning of the term).

THIRD WEEK

Waking-up bath. *First lesson.* Let one or two pupils demonstrate in pantomime how they take their morning "waking-up" bath. Point out that the use of warm water and soap, followed with a cold splash to the face, neck, and chest, and a brisk rub, is the most satisfactory method. Call attention to the importance of washing the corners of the eyes, and the need of removing crusts from the edges of the eyelids. Suggest that it is also advisable to wash behind and inside the ears; other people can see there, although it requires considerable manipulation of mirrors for the person most concerned to make an inspection. Explain that the proper way to wash the interior of the ears is to use a damp cloth over the end of a finger, and to insert the finger only as far as it will easily enter the canal. The outer part of the ear canal needs the attention; the inner part of the canal cleanses itself, if the condition of the ear is normal. If for any reason the inner part of the ear

requires attention, the services of a physician should be secured. It is unwise for parents to attempt to treat conditions affecting the inner part of the ear canal.

Second lesson. Continue the discussion of the previous lesson. Explain that the digestive organs as well as the face and chest need the cleansing and stimulating effects of cold water. Speak of the importance of drinking a glass of cold water upon rising, and several glasses of water during the day.

Call attention again to the necessity for giving the hair proper care. Point out the danger of contracting a cold if the hair is not properly dried before going out, especially in cold weather.

Discuss the hygiene of the hands. Explain why the frequent use of cheap soap on the hands, particularly in winter, tends to make them rough and sore (page 144). Call attention to the proper method of removing dirt from under the finger nails. The nails are most easily cleaned after they have been soaked in warm, soapy water. A knife should not be used to remove the dirt from the under side of the nails, for it leaves the nails rough and makes it more difficult to remove foreign matter. Illustrate by the use of a diagram on the board the proper method of cutting the finger nails. Discourage the habit of biting the nails, and of biting hangnails. Explain what "moons" are, and how to push back the cuticle.

Emphasize the desirability of taking a full bath at least once a week. Point out that unclean bodies and soiled underclothing are largely responsible for the bad odor which develops in any room where many persons are present and the ventilation is poor.

FOURTH WEEK

Oral hygiene. *First lesson.* Do the pupils know what a "dental cripple" is? Explain that dental cripples are people with decayed and uncared-for teeth, teeth that fail to do their full share of work in preparing food for digestion.[1] A decaying tooth is a nest for bacteria, the poisons of which may cause ill health when absorbed into the blood. Use the familiar illustration of the mouth as a menagerie of "animal" germs waiting in open-doored enamel "cages" for a chance to perform their particular "stunt," such as causing a sore throat, a cold, a toothache, etc.

Most of the decaying in the teeth takes place while a person sleeps, and this fact may be used to emphasize the very great importance of thoroughly brushing the teeth before going to bed. Demonstrate the proper method of brushing the teeth. Explain why a circular movement is more effective than simply a transverse movement. In most cases cavities form between the teeth and on the surface of the back teeth—places that are hardest to clean. Teach that the use of a brush is not sufficient: dental floss also is needed to clean between the teeth. Dental paste or powder is helpful in cleansing the teeth

[1] Dr. Leak, Director of Oral Hygiene for the New York State Department of Education, has found that 90 per cent of the children in the first grade have bad teeth. This means that children in the well-to-do parts of the cities, as well as the children of poorer parents, show great need for dental attention. One third of the children have abscessed conditions. Not infrequently this means absorption of pus and consequent ill health. Every fourth or fifth child had inadequate masticating surface. Forty per cent of the children in the first grades have decayed first molars, notwithstanding the fact that these teeth have not been in the mouth more than a year.

and in making the surface smooth. The proper care of the mouth includes brushing of the teeth, gums, and tongue, and gargling of the throat.

Ask the pupils to notice the condition of their mouths in the morning. Is a sticky substance present? Is the tongue clean? Is the mouth moist?

Second lesson. Have the pupils report on their findings as to the condition of their mouths in the morning. Explain that breakfast tastes better and is more readily digested if the teeth have been cleaned and the mouth rinsed out. Point out that mucus (the sticky substance found in the mouth) frequently collects in the back of the nose and in the throat during the night, and should be removed in the morning by gargling in order to prevent its being swallowed with the food. Inspect the pupils' teeth. Discuss some of the consequences of neglecting to give the teeth proper attention.

The instruction that is given in connection with the hygiene of the mouth should include the following rules:

1. Brush the teeth *at least* twice a day, before breakfast and before retiring at night.
2. Use the brush with a circular motion and go over all the surfaces.
3. Wash the toothbrush before and after using it on the teeth and gums.
4. The proper care of the teeth requires the use of a brush, dental floss, and a dental powder or paste.
5. Take at least two minutes to clean the teeth.
6. Have the teeth examined by a dentist at least twice a year.
7. Rinse the mouth frequently and thoroughly and gargle the throat, preferably with a mouth wash.

8. Use an alkaline solution at night. (Bicarbonate of soda may be used.)

FIFTH WEEK

Breakfast. *First lesson.* Discuss briefly the use of bricks in the repair and construction of buildings. Point out that the human body also needs "bricks" for repair and growth, and that the right kind of breakfast contains at least one *building food* that makes "body bricks." Most foods contain building material (protein), but the foods that are most useful for building purposes are lean meats, milk, cheese, eggs, peas, beans, and nuts.

The body needs *fuel foods* also. Name some of the common fuel foods (starchy foods, sugars, and fats). Call attention to the fact that children need a large amount of fuel foods because they use up so much energy in their work and play.

Explain that the body needs *regulating foods* too. Green coarse vegetables containing a lot of wood fiber, fruits, and water (if water may be called a food) have these "regulating" properties.

Certain foods that we have already classed as building, fuel, or regulating foods fall also into another class, which may be called *protective foods.* They contain the *vitamins* which are an indispensable part of the diet. Milk, eggs, cereals, fruit (especially oranges), and green vegetables all contain vitamins.[1] Some of these foods should be eaten regularly.

[1] The presence of vitamins in green vegetables has only recently been discovered. Formerly vegetables were eaten largely for their taste and their effect on intestinal activity. Some mineral value has been attached to

"Eating keeps one alive; it is worth doing well." Bring out the reasons for chewing food thoroughly: because it improves the taste, mixes the food with a digestive juice in the mouth (salivary secretion), and makes the food small enough for the stomach to handle (the stomach has no teeth). Explain that it is impossible to get the full benefit of attending school if no breakfast has been eaten, or if it has been eaten in haste. Ask the pupils to note particularly what they eat at their three meals tomorrow.

Second lesson. Discuss the kinds of foods that make a good breakfast. Suggestions on what foods to eat should be simple and reasonable; keep in mind the financial status of the parents of the children. Explain that an ideal breakfast contains ripe or stewed fruit, cooked cereal and clean milk, an egg (never hard boiled), bread or toast and butter, and milk to drink. Point out that frequently some of these items appear in the list for other meals. Explain that children need more to eat in proportion to their size than do grown people. Discuss the harmful effects of coffee and tea on young people. Point out that body weight and height considered in their proper relation to age constitute a good index of whether a child is eating and digesting properly the amount of food necessary for growth and strength.[1]

them also. Now, however, they take a new place in the diet and may be classed among the "protective foods." They are believed to be an important and necessary addition to the diet because other foods, such as meats, fats, cereals, sugar, and potatoes, probably supply an inadequate amount of vitamins.

[1] The use of body weight or body height as an index of the child's nutritional functions has been found to lead to false conclusions. Growth is

The basic parts of this lesson will be repeated in connection with the subsequent discussion of foods for lunch and for the evening meal.

Do you keep any weight and height records of your pupils? Weight and height should be a matter of record in all grades. Refer to the weight and height tables on pages 206 and 207.

Parents and teachers will find much helpful material on the subject of food for young children in *Diet for School Children*, a bulletin issued by the Bureau of Education, Washington, D. C.

SIXTH WEEK

Preparation for school. *First lesson.* This is a discussion of the special topic of personal hygiene. Call attention to the desirability of having the face and hands washed, the teeth brushed, the hair combed, and the clothing clean and neat. The teacher should take occasion, as the opportunity offers, to speak to children individually about the importance of going to the toilet in the morning and attending to the needs of the body. It is important that children get up early enough to attend to the morning routine properly, before going

due to hereditary influences as well as to environmental influences. The latter are more or less controllable, but tne former are not. Holt has found that children may be of average height and yet be suffering from malnutrition, the hereditary influence being stronger than the factor of nutrition. Similarly, children may be of average weight and yet subject to nutritional disturbances; here again heredity determines the physical status of the child. The best index of satisfactory growth in children is what is known as the *age-weight-height* index. It indicates for practical purposes what the nutrition of the child is, and comparative measurements made from time to time show whether progress is satisfactory. Holt allows a deviation of ten per cent from the average to count as normal.

to school, so that they may get a good start for the day, both for the sake of their own health and temper, and for the amount of work to be accomplished during the day.

Teach the simple lessons of seasonal hygiene (what constitutes proper clothing for the different seasons). Emphasize the importance of keeping the feet and clothing dry, and explain the relation of exposure to cold and wet to colds and pneumonia. The germs that cause these diseases must of course be present before the disease can be contracted, but the lowering of vitality due to exposure is a handicap to the body in its fight against the germs, and gives the invading organisms an advantage.

Second lesson. Discuss the dangers at street crossings and suggest rules for the prevention of accidents there. Caution the pupils against "catching" rides on wagons, automobiles, and street cars, playing in the streets where traffic is heavy, disturbing strange dogs, and taking "dares" that endanger the limbs or life. Distinguish between courage and foolhardiness.

Ask the pupils to report any unhygienic conditions that they have observed on their way to school. Discuss those conditions and point out their probable effect on the health of the community. Use this opportunity to point out to the pupils that whenever they feel sick they should tell their parents before coming to school. Discuss the reasons why it is not right for a sick child to attend school, as (1) danger of giving the disease to other children; (2) retarded recovery of the child who is sick, and perhaps increased severity of the attack; (3) retarded progress of the class. Sick children and

children who are physically and mentally handicapped serve altogether too frequently as pacemakers for the class.

SEVENTH WEEK

Morning inspection in school. *First lesson.* In classes where the pupils are organized into "health teams" (page 137) this lesson may take the form of a competitive examination on health habits, cleanliness, and knowledge of personal hygiene as taught in class. The row winning the greatest number of points may be recognized by having its number or its team name placed on the "health ladder" (page 174).

In classes where no formal health inspection is made, the teacher should explain that the general health of the class requires each pupil to report promptly to the teacher any symptoms of sickness. Explain what some of the common symptoms of sickness are, and discuss how disease is spread. Point out that the morning health inspection is concerned not only with the prevention of disease, but also with the discovery of physical handicaps, such as defective hearing and sight and obstructed nasal breathing. Make the children understand that the health of the class depends upon the health habits of the pupils, the vigilance of the teacher, nurse, and doctor, and the efficiency of the janitor.

Have the seats been adjusted to the children? Is the thermometer in a suitable place and in working order? Are the shades in repair? Is the room clean, free from dust, and properly ventilated?

Second lesson. Prepare and read a letter describing a hypothetical case of sickness that illustrates some

of the ways in which school children contract diseases, and represent it as coming from another teacher.

Suggestion for the letter: I have a letter to read to you that I received today from a teacher in ——. She says:

"I am glad to hear of the splendid way your pupils are taking hold of your health activities. Unfortunately, my pupils don't seem to have the same spirit. Do you remember ——, about whom I wrote you, the boy with such poor health habits? Well, he came to school the other day and I thought from his looks that he wasn't well. But he said he was feeling all right, so I allowed him to stay in class. That night he developed measles, and the doctor has ordered all children who have never had measles to stay at home for fear that some will develop it and give it to others. I have since learned that —— lied to me about how he felt. He told the boys he was sick, but didn't want his parents to know it for fear he would be kept away from a party that night.

"P. S. The parents of these children who are kept at home have asked me to send them books to study, but the school doctor won't allow me to do it. What do you think is the reason?"

Explain to the class that the letter is not genuine, but that the case might easily occur in schools where the pupils neglected to practice the hygiene which they had been taught. Have the class suggest material for a letter that you might write in reply.

EIGHTH WEEK

Mental and physical training. *First lesson.* This lesson is concerned with five hours of the child's daily program, five important hours during which the child's mental and physical growth is greatly increased. Mental training and physical training are both essential in

the educational process. Discuss the hygiene of both work and play periods. Explain that good posture is desirable because it gives increased height, improves the appearance, favors increased lung capacity, and allows all the organs to develop normally. Point out that strength and good health depend upon good posture as well as upon other good habits of hygiene. Poor posture is often a sign that the muscles of the back are fatigued or that the person is careless of his position. Discuss the proper position when seated at a desk for study and for writing, when standing for recitation or reading, when singing, and during physical exercise.[1]

Have one of the larger pupils change seats with the smallest pupil, and ask the class to consider the advisability of making the change permanent. Ask the two pupils to tell how it feels to sit in a seat that doesn't fit the body. Point out that the feet should rest squarely on the floor, and the arms comfortably on the desk.

There should be sufficient room below the desk for the knees. The seat should support the back in the lumbar region. There should be about one inch between the front of the seat and the near edge of the desk. School furniture should be adjusted to the child, not the child to the furniture.

Frequent rest periods in which muscular exercises are given serve as the best postural antidote to poorly

[1] Bancroft's *The Posture of School Children* is a valuable book on this subject. There are excellent chapters on the carriage of the body in Ritchie and Caldwell's *Primer of Hygiene* and Ritchie's *Primer of Physiology*. Posture pins, appropriate for awarding to pupils having good posture, may be secured from the American Posture League, Inc., 1 Madison Avenue, New York.

fitting seats and desks. Keep in mind the fact that there is a direct relation between slovenly posture and slovenly work.

Second lesson. Draw a diagram of the chest and spine as seen from the front, indicating the abnormal curve of the spine to one side and the distorted position of the ribs that result from sitting in a faulty position. (See any textbook on anatomy or physiology.) Ask the pupils to discuss the diagram and tell how they think the condition may be improved. Draw a diagram of the body from the side, showing the abnormal curve in the spine and the cramping of the abdominal organs that result from sitting in a poor position. Demonstrate with one of the pupils the proper sitting and standing positions. Explain that the setting-up exercises are designed to correct poor posture. Bring out the idea that strong muscles developed from these exercises act like ropes to pull the trunk into a correct position. Good posture is best secured by creating in the pupil a desire for good carriage. Unless drill work is supplemented by genuine interest on the part of the pupil, the teacher's efforts will have discouraging results.

The setting-up drills that are given between classes serve several important purposes. Opportunity to ventilate the classroom is given without danger of the children's taking cold; the exercises will prevent this. Marching exercises cause the air currents coming through the open windows to break up into very small currents which are forced into every corner of the room. Unless some marching exercise is given, the room is unequally ventilated. The drill should contain a stretch-

ing exercise, an exercise that is executed at command (educational), a mimetic exercise,[1] and a vigorous exercise for the large muscles of the limbs or the trunk. This general exercise should be energetic enough to make the blood hungry for oxygen, and should stimulate rapid circulation and deep breathing. The pressure effects on the digestive organs are valuable also. A setting-up drill of this type is most useful when vigorous enough to be stimulating, and short enough not to be fatiguing. The triple posture test should be given regularly some time during each month.[2] Posture training has psychological as well as physiological values.

Test the different rows for excellence in the setting-up drills. Make the posture test if time allows; at any rate note the general posture during the week. Follow the plan suggested in the lesson for the seventh week (page 185) and announce the row making the best record in mental and physical training.

NINTH WEEK

Recess activities. *First lesson.* Have the pupils state their reasons for favoring a morning and an afternoon recess. Explain why the muscles of the body need exercise. Explain also that there are small muscles in the eye that are working hard practically all the time while lessons are being studied and desk work is being done. These muscles get tired just like any other

[1] An exercise in which the movements of the teacher are followed in imitation or where some occupation or game is dramatized, as shoveling snow.

[2] See Bancroft's *The Posture of School Children* for a complete discussion of the matter. The American Posture League, Inc., New York, will send pamphlets upon request.

muscle, and need rest. The recess period gives the small muscles their much-needed rest and at the same time gives the larger muscles their much-needed exercise. The digestive organs become cramped from poor positions of the body, as sitting sideways in the seat, sliding forward on the seat, bending over the desk when reading or writing. Explain briefly what these digestive organs (the stomach and intestines) are for and show that they need plenty of room in order to do their work.

Another reason for recess is that the air in the classroom becomes foul. All the pupils should go out for recess while the room is being thoroughly ventilated; windows should be opened at both top and bottom. It is a bad practice to keep a pupil in at recess as a punishment. Neither should any pupil be excused from going out at recess any more than from attending a recitation, unless there are very special reasons. If a child is not physically fit to go out at recess (during cold weather), he should remain in the principal's office or some other room that does not require free ventilation. Urge the pupils to drink water at recess, and suggest that time be taken to visit the toilet.

The recess period is a part of the school work, and the playground activities are therefore under the direction of the teacher. Urge the pupils not to remain inactive, but to play some game. Keep in mind the importance of what Dr. Burnham calls the "therapeutic value of success" in handling children who are easily discouraged and doubt their ability to engage successfully in mental and physical contests with their playmates.

The teacher should be able to direct the playground activities and should enter into the games if it is at all convenient. If the weather forbids an outdoor recess, the classroom can be used successfully by organizing the play. Any good book on games contains a list of games suitable for indoor use. Usually the school library will have some helpful books on schoolroom games. The schools having the advantage of regular physical training supervision will find no trouble in meeting the problems of a rainy day.

Make this lesson an opportunity to teach the pupils that the recess period is given them for definite reasons, and that boys and girls must play hard and fair; they must be loyal to their team-mates in all contests and generous to their opponents.[1]

It is largely within the province of the teacher to be the determining factor in deciding whether the school yard shall serve as a *play ground* for the development of the physical, social, moral, and educational qualities of good citizenship, or as a *plague ground* for the breeding of low morals, unsocial habits, and physical degeneracy.

Second lesson. Call attention to some of the results of recess activities: the increased color in the cheeks, deep breathing, rapid pulse. After recess the seats feel more comfortable, lessons are easier to study, the air in the room is better, it is easier to take good sitting positions. Discuss some of the common playground accidents, how they occur, and how they may be pre-

[1] The teacher will find the following pamphlet useful: *A Study of School Recesses*, by W. H. Heck, Extension Series, Vol. III, No. I, University of Virginia.

vented. Warn the class particularly of the dangers connected with swings, teeters, giant stride, slide, horizontal bar, and ball games. Explain first-aid treatment for bruises.

The teacher is responsible for seeing that children are properly clothed for the playground, and it is her duty to supervise the activities. It is advisable to get the class under control at the close of the recess periods by having the pupils march indoors. The practice of using the doormat should be insisted upon. Explain that quick response to the teacher's directions will save time in getting on and off the playground.

Do you keep any records of games and contests conducted on the playground and post them on the board? Such a plan lends new interest to the recess period and helps it to serve a definite and important purpose.

TENTH WEEK

Luncheon. *First lesson.* Does the stomach ever have a recess? Have the pupils discuss briefly the work of the stomach in digesting food. Point out that the stomach gets its recess between meals, if candy and cake and soda are not forced upon it at frequent intervals. Explain that the stomach is composed of muscle, and like other muscles it needs a rest after it has been exercising. Review the lessons for the fifth week, page 181, and call attention to the main reasons why food is needed by the body.

Point out that the dinner should be served hot. When lunch is eaten at school, the evening meal must be the dinner. Discuss the question of what consti-

tutes a good dinner. An ideal dinner contains a soup, meat (not fried) or fish, potato, a second vegetable, milk or cocoa, bread and butter, and a simple dessert. Call attention to the excellent practice of drinking several glasses of water daily. Water taken at meal time should be swallowed between mouthfuls of food and not used to wash the food down.

Summarize the subject of diet by pointing out that the following foods are suitable for the different meals of the day: well-cooked cereals, fruits, wheat, brown, or corn bread, meat, eggs, milk, fish, cocoa, vegetables (especially green leafy ones), simple desserts, pure candy.[1] Teach the pupils to avoid fried foods, too much meat and eggs, condiments, tea, coffee, alcoholic drinks, unripe fruit, rich pastries, overeating, and eating too rapidly. Discourage the children from spending their pennies for cheap candy; advise them instead to save their pennies and buy fruit. Point out that food should be varied and thoroughly chewed.

Second lesson. The condition of the individual at meal time is almost as important as the preparation

[1] The great importance that has been attached to the caloric value of foods seems to have been ill-founded. A calorie is not a food ingredient: it is simply a measure of the amount of heat that a certain quantity of food will produce. Nutrition experts are now recognizing the fact that many foods having the same caloric value possess different nutritive values, and are pointing out that it is not safe to prepare a diet solely on a caloric count. Nutrition is a complicated process and depends on other factors than the generation of heat through the oxidation of food taken into the body. The rational thing to do in selecting a diet is to prepare it on the basis of its nutritive values as proved by actual experiment in human beings and animals. It is obviously unwise to make the selection solely on the basis of caloric value.

of the food. Explain that the stomach fails to do its work if the body has been vigorously exercised just before meal time: the muscles have temporarily taken blood from the stomach and left it impoverished in material out of which to manufacture digestive juices. Cheerfulness also is important; food is not properly digested if the mind is worried or the conversation is unpleasant during the meal. Explain why it is unwise to eat heartily if feeling sick. Discuss table manners, speaking of the proper use of the knife and fork. Emphasize the importance of cleanliness of food and hands, and the necessity of keeping flies away from the food.

Discuss the special considerations of the rural school lunch. All children are better nourished and do better school work in the afternoon if they have a warm lunch. Teachers who have tried the experiment of having the warm school lunch have found that when the noon hour is well planned the teacher's burdens are lightened rather than increased. This is especially true in rural schools; the noon hour is more orderly and restful and there is considerable improvement in work and discipline in the afternoon session.[1]

ELEVENTH WEEK

After-school activities. *First lesson.* Encourage the pupils to tell what they do after school. Use this opportunity to caution them about the dangers connected with their various activities. Children should

[1] Farmers' Bulletin, No. 712, *School Lunches*, contains excellent suggestions regarding the preparation of the school lunch. Address the Department of Agriculture, Washington, D. C

be cautioned about skating recklessly on sidewalks, running pushmobiles and other wheeled playthings in the street, coasting on city sidewalks, crossing behind street cars, crossing the street where traffic is heavy, climbing freight cars or passing under them, and ignoring the signal of the flagman at crossings. Add any other dangers peculiar to the neighborhood and the season.

Children who have chores to do about the barn should be cautioned about injuries from rusty nails, the danger of being kicked by the horse, the importance of cleanliness in handling milk, care in the use of the ax and saw. House chores may be discussed in relation to the importance of cleanliness in washing and handling dishes, the proper method of sweeping and dusting rooms, ventilation of the rooms, preparation of the meals, and care of the garbage.

Name some of the common accidents that may result from coasting, playing in the street, venturing upon ice that has not been tested, bathing in places forbidden by the parents, taking "dares" that endanger the limbs and life, playing with matches, and the careless use of sling-shots, air rifles, etc. Emphasize the importance of keeping away from children who break quarantine or who are sick.

Second lesson. Ask one of the boys to show his muscle. He will probably flex his arm as hard as possible and take considerable pride in the size of his biceps, for to the average boy "muscle" means the biceps muscle. Explain to the class that about half of the body is muscle, and that exercise is important because there are so many muscles to keep in good

condition. Point out on one of the pupils the location of the more important voluntary muscles: muscles of the arm (biceps, triceps, and deltoid), muscles of the neck, muscles used in chewing food, muscles used in breathing, the muscles of the back that assist in maintaining correct posture, the waist muscles that are of importance in digestion, and the muscles of the leg.

Explain that the heart is made of muscle, and discuss circulation briefly. The body is made up of millions of very small sections called cells which depend on the blood to bring them food, water, oxygen, and minerals; they have no way of supplying their own needs. The heart pumps blood all over the body through blood vessels and nourishes these cells. The blood finally returns to the heart after having visited the stomach and intestines for food and water, the lungs for oxygen, and the kidneys for elimination of the wastes from the body cells.

Point out that there are also important muscles that exercise involuntarily, as the muscles in the walls of the stomach and intestines, the muscles in the walls of the blood vessels, and the heart muscle. The general health of the body is dependent upon sufficient exercise of all these muscles; but the strength of a muscle depends not only on proper exercise, but also on good digestion, fresh air, cleanliness of the body (inside and outside), and rest. Place emphasis on the thought that growth in height, weight, and strength depends also on the physical condition of the body. Adenoid growths, diseased tonsils, decayed teeth, discharging ears, and defective vision are handicaps in the race for health and strength. Poor food, lack of sufficient rest and sleep, and over-exertion weaken the muscles.

The teacher should make an effort to suggest useful forms of after-school recreation; too much of children's activity consists of aimless play.[1]

TWELFTH WEEK

The evening meal. *First lesson.* Review the essentials outlined in the lessons for the fifth and tenth weeks. Explain briefly the different steps in digestion: digestion in the mouth (food chewed and mixed thoroughly with saliva); stomach digestion (some foods digested, others prepared for final chemical action in the intestine); and intestinal digestion (supplements the work of the salivary and gastric glands, and absorbs digested food). Point out that "it is not what a person eats but what he digests and uses that gives him strength."

Second lesson. Team work in games means that each player assumes responsibility for some definite act and does it to the best of his ability. Team work in digestion means that each part of the digestive tract does its special work in preparing food for the cells of the body. Is it fair to handicap the digestive system team? Some of the handicaps that interfere with its work: bolting food half-chewed; eating too much at one time; eating too much of one kind of food; eating at irregular times; neglecting the

[1] The United States School Garden Army now has more than two and a half million enlisted pupils who are receiving valuable instruction and exercise. The organization of a unit in a local community will do much to stimulate an interest in making wise use of leisure time. For particulars address Director United States School Garden Army, Bureau of Education, Washington, D. C.

removal of wastes. Of course nervousness is bad for the "digestive game" as well as for any other game.

THIRTEENTH WEEK

Evening activities. *First lesson.* Have several pupils tell what they do in the evenings. The various activities named — chores, play, lesson-work, reading, "movies" — will suggest opportunity to the teacher to present the subject of hygiene in relation to these activities. Dwell particularly upon the hygiene of the eyes; bring out the fact that daylight is the best light for eye work. Urge the pupils to remain outdoors as much as possible. Review the lesson on the prevention of accidents during play. Recommend that each pupil do some useful chores during the day. Encourage the practice of making play of work.

Second lesson. The last of the evening activities is the preparation for bed. Discuss in review the care of the teeth. Mention the fact that teeth decay most during the night unless they are properly cleaned. Emphasize the importance of airing the clothes that have been worn during the day. Explain that one window at least in the bedroom should be down at the top and up at the bottom. Introduce a discussion of the hygiene of the hands and feet. During dusty weather and the barefoot season, feet should be washed each night. If the feet perspire freely they should be bathed daily and clean stockings worn.

FOURTEENTH WEEK

Rest, sleep, and growth. *First lesson.* Ask the class why babies grow so fast. Explain that growth depends

to a great extent on a sufficient amount of sleep, an abundance of fresh air, a proper amount of nourishing food, and healthful physical exercise.

Emphasize the fact that the body repairs itself during sleep. Point out that sufficient sleep must be secured each night to enable the body to repair itself with the "building food" eaten during the day; if sleep is lost for several nights, the repair of the body is greatly retarded. Explain that sick people require more sleep than well people do, because disease poisons destroy the tissues of the body.

Remember that individuals differ as to the amount of sleep they require, and the conditions necessary for restful and invigorating sleep. In general, however, no tea or coffee should be taken at night, boisterous play and intensive study should cease some time before retiring, preparation for sleep should be more or less routine, all moral accounts, worries, and unhappy emotions should be happily adjusted if possible, and the sleepingroom should be well ventilated. Bed clothing should never be excessive in weight. Lights should be dimmed or put out. All physical needs of the body should be attended to, such as taking a drink of water or milk and perhaps a very light lunch, elimination of wastes, bathing, etc. There appears to be some foundation for the belief that dreams of things done during the day indicate nervous fatigue, whereas dreams of things done days or weeks or even longer periods ago represent more nearly the normal dream.

Do children sleep more than their parents? Why? Children need to have a regular time for going to bed.

It is a mistake for parents to allow children to remain up until they are about three quarters asleep. Discuss the hygiene of the bedroom. Do the pupils understand the effect of tea and coffee on sleep? Children in the third grade should have ten or eleven hours of sleep. A reasonably low pillow should be advised. Too many heavy covers interfere with rest.

Second lesson. Review the essential facts that have been taught during the term. A convenient way to approach this lesson is to let the pupils tell about some of the things that they do on Saturdays and other holidays, such as going on picnics and excursions, and visiting the museum or the zoo. A picnic trip suggests a lesson on food, the preparation of the lunch, importance of pure drinking water, danger from poison ivy, insects, snakes, etc. A visit to the zoo suggests a lesson on the habits of animals — eating, bathing, exercising, sleeping — which may be compared with those of young people. The museum illustrates in a most interesting way the life cycle of insects, and this leads directly to a discussion of the relation of insects to disease. In a similar manner, exhibits of fish and plant life offer opportunities for reviewing the work in hygiene.

FIFTEENTH WEEK

Dramatics. Many of the health principles studied during the year can be vividly presented by means of a "health playlet." The teacher can secure helpful suggestions on the presentation of a playlet by writing to the National Association for the Study and Prevention of Tuberculosis, 105 East 22nd Street, New York,

or the Brooklyn Bureau of Charities, 69 Schermerhorn Street, Brooklyn, New York. These organizations will send free, or at a low price, sample playlets that may be acted as they are or may be used for suggestions in working up an original health playlet. Assign parts and begin rehearsals at once.

SIXTEENTH AND SEVENTEENTH WEEKS

Rehearsal of a playlet. These two weeks will give enough time for complete rehearsal of the playlet. A study of the playlet will afford an excellent review.

EIGHTEENTH WEEK

Presentation of the playlet. Have the pupils invite their parents. If time permits, conduct some of the team games and show how a morning health inspection is made. Have the school physician and the school nurse present, if possible, and let them take some part in the program, either demonstrating how children are examined or explaining about the work in general.

Exhibits, prepared by the class or secured from other sources, are always helpful. Your state department of education or the state board of health may be able to help with suggestions or material.[1]

An attractive health exhibit can be prepared by clipping pictures from magazines and using them to tell some health story. They can be mounted on large sheets of manila paper or on cardboard, and

[1] The National Child Hygiene Association, New York, has a Parcel Post Exhibit of twenty-five panels that could be used with much success. The posters lay stress on the things that should be done, rather than on things that should be avoided.

decorated by the use of colored chalk. Some simple explanation of the pictures may be desirable. Children may all combine in making these pictures, or each pupil may prepare his own and enter it in a contest that can be decided on the day of the entertainment.

Some schools find it works well to have the pupils in the upper grades write a health playlet as part of their course in hygiene, and then have the play presented by the pupils in one of the lower grades. It is often an excellent plan to make use of as much local talent as possible so that the interest in the play is not confined to the class presenting it.

The use of healthgrams on the board is an effective way of driving home to the pupils, and also to the parents who visit school, the importance of health work. The following may be used: "Your lungs can't be washed, but they can be aired." "Health is a wealth no one can tax you for." "A toothbrush in time saved mine." "Accidents don't happen — they are caused." "Carry no charge account with Mother Nature." "Better milk for better babies." "Care may kill, but Don't Care kills more."

APPENDIX

NUTRITION is a subject which is assuming great importance in the health programs of our schools. Teachers no longer guess as to the nutritional powers of the pupils placed under their care; they weigh and measure each pupil carefully and compare the results with standards which have been determined after an examination of great numbers of school children. School officials have learned that malnutrition and under-nutrition are the causes of much of the poor work that is done in school, and they are seeking the assistance and intelligent coöperation of the parents. Parents should have the importance of a "drive on nutrition" put squarely up to them.

The first step is to rent or buy scales. A measuring rod can be provided with little difficulty. Follow-up work must be inaugurated after the pupils have been weighed and measured. Not all cases of underweight are due to lack of suitable food. There are such problems as late hours; physical fatigue, especially from chore work; overcrowding; poor ventilation; physical conditions which need attention, such as decayed teeth, diseased adenoids and tonsils, suppurating ears, etc.; poor habits of hygiene, such as eating rapidly, giving way to a capricious appetite, allowing the intestines to become sluggish, etc.

Each case should be studied and treated separately, especially if gain in weight is not satisfactory. The weighing should be done once a month. On pages 206 and 207 are given the weight and height tables. It is important that each pupil have a record card for weight and height to take home at regular intervals for the information of the parents. Sending this card gives an opportunity to advise special kinds of food that may be lacking in the dietary. A large chart placed on the board for the purpose of showing the weight and height of each pupil and the gain each month

is very helpful in stimulating interest in these indexes of nutritional processes. Special recognition of one sort or another ought to be given to the pupil showing the greatest gain in the month.

Some provision should be made for warm lunches. The school will need an oil stove (or some other provision for preparing warm food), some dishes, cooking utensils, and towels. A "shower" may be given and necessary supplies contributed in this way. Pupils assist the teacher in planning and preparing the lunch, and help look after things in general. The menu usually consists of a hot soup, crackers or sandwiches, and perhaps cocoa. Arrangement can be made to allow pupils to boil eggs if they wish to. This lunch is intended merely as a supplement to the lunches which are brought by children who live too far away to be able to go home for a warm meal.

Variation in the diet is essential, and the responsibility for securing it ought not to rest wholly upon the person in charge of the lunch hour. Parents can do a great deal to make the lunches which they prepare appetizing and nutritious. Children should be tactfully instructed — and through them, their parents — to prepare lunches of sandwiches with nutritious fillings, such as sliced tomatoes, chopped egg, meat, cheese, peanut butter, etc., plain cookies or cake, fruit, and milk or cocoa. The milk and cocoa may be omitted where the school has facilities for serving a hot drink or soup. Health work of this kind is fundamental in the life of the child. Furthermore, it constitutes an insurance to the parent and the community against poor health, physical inefficiency, and feeble resistance to disease. From every point of view, education beats medication in the game of Health.

It is important to keep in mind the fact that the success of nutrition work depends fully as much upon the advice and instruction which the parents and the pupils receive

as upon the increase in food. Where special nutritional work is done, a mid-morning lunch is given, consisting of milk and a cracker or two. A second supplementary feeding occurs in the afternoon, usually after school.

School officials should look upon the school lunch plan as much more than a method of seeing that the school children receive the kinds of food needed for their growth and health. This is of course an effective argument for it; but there are other values in an organized school lunch that should not be overlooked. The practical side of school lunches is seen in the increased knowledge of the value of foods and their preparation. Habits of hygiene are more easily formed when children eat together and observe each other's habits. The social value of an organized lunch period is always considerable, and is especially so when the teacher in charge realizes that she is "feeding minds and souls as well as bodies."

The teacher will find "The Lunch Hour at School," published by the Bureau of Education, Washington, D. C., a valuable bulletin.

Height and Weight Table for Boys[1]

Weights and measures should be taken without shoes or coats and in only the usual indoor clothes. Weigh on the same day each month. For age take the nearest birthday.

Height Inches	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs
39	35	36	37											
40	37	38	39											
41	39	40	41											
42	41	42	43	44										
43	43	44	45	46										
44	45	46	46	47										
45	47	47	48	48	49									
46	48	49	50	50	51									
47	....	51	52	52	53	54								
48	....	53	54	55	55	56	57							
49	....	55	56	57	58	58	59							
50	....	....	58	59	60	60	61	62						
51	....	....	60	61	62	63	64	65						
52	....	....	62	63	64	65	67	68						
53	....	....	....	66	67	68	69	70	71					
54	....	....	....	69	70	71	72	73	74					
55	....	....	....	....	73	74	75	76	77	78				
56	....	....	....	....	77	78	79	80	81	82				
57	....	....	....	....	....	81	82	83	84	85	86			
58	....	....	....	....	....	84	85	86	87	88	90	91		
59	....	....	....	....	....	87	88	89	90	92	94	96	97	
60	....	....	....	....	....	91	92	93	94	97	99	101	102	
61	....	....	....	....	....	....	95	97	99	102	104	106	108	110
62	....	....	....	....	....	....	100	102	104	106	109	111	113	116
63	....	....	....	....	....	....	105	107	109	111	114	116	117	119
64	....	....	....	....	....	....	....	113	115	117	118	119	120	122
65	....	....	....	....	....	....	....	....	120	122	123	124	125	126
66	....	....	....	....	....	....	....	....	125	126	127	128	129	130
67	....	....	....	....	....	....	....	....	130	131	132	133	134	135
68	....	....	....	....	....	....	....	....	134	135	136	137	138	139
69	....	....	....	....	....	....	....	....	138	139	140	141	142	143
70	....	....	....	....	....	....	....	....	....	142	144	145	146	147
71	....	....	....	....	....	....	....	....	....	147	149	150	151	152
72	....	....	....	....	....	....	....	....	....	152	154	155	156	157
73	....	....	....	....	....	....	....	....	....	157	159	160	161	162
74	....	....	....	....	....	....	....	....	....	162	164	165	166	167
75	....	....	....	....	....	....	....	....	....	....	169	170	171	172
76	....	....	....	....	....	....	....	....	....	....	174	175	176	177

CHILD HEALTH
Health in Education
Education in Health

ABOUT WHAT A BOY SHOULD GAIN EACH MONTH

AGE: 5 to 8 . . . . . 6 oz.
8 to 12 . . . . . 8 oz.
12 to 14 . . . . . 12 oz.
14 to 16 . . . . . 16 oz.
16 to 18 . . . . . 8 oz.

[1] Table prepared by Dr. Thomas D. Wood. Used by courtesy of Child Health Organization.

Height and Weight Table for Girls[1]

Weights and measures should be taken without shoes and in only the usual indoor clothes. Weigh on the same day each month. For age take the nearest birthday.

Height Inches	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs
39	34	35	36											
40	36	37	38											
41	38	39	40											
42	40	41	42	43										
43	42	42	43	44										
44	44	45	45	46										
45	46	47	47	48	49									
46	48	48	49	50	51									
47	....	49	50	51	52	53								
48	....	51	52	53	54	55	56							
49	....	53	54	55	56	57	58							
50	....	....	56	57	58	59	60	61						
51	....	....	59	60	61	62	63	64						
52	....	....	62	63	64	65	66	67						
53	....	....	....	66	67	68	68	69	70					
54	....	....	....	68	69	70	71	72	73					
55	....	....	....	....	72	73	74	75	76	77				
56	....	....	....	....	76	77	78	79	80	81				
57	....	....	....	....	....	81	82	83	84	85	86			
58	....	....	....	....	....	85	86	87	88	89	90	91		
59	....	....	....	....	....	89	90	91	93	94	95	96	98	
60	....	....	....	....	....	....	94	95	97	99	100	102	104	106
61	....	....	....	....	....	....	99	101	102	104	106	108	109	111
62	....	....	....	....	....	....	104	106	107	109	111	113	114	115
63	....	....	....	....	....	....	109	111	112	113	115	117	118	119
64	....	....	....	....	....	....	....	115	117	118	119	120	121	122
65	....	....	....	....	....	....	....	117	119	120	122	123	124	125
66	....	....	....	....	....	....	....	119	121	122	124	126	127	128
67	....	....	....	....	....	....	....	....	124	126	127	128	129	130
68	....	....	....	....	....	....	....	....	126	128	130	132	133	134
69	....	....	....	....	....	....	....	....	129	131	133	135	136	137
70	....	....	....	....	....	....	....	....	....	134	136	138	139	140
71	....	....	....	....	....	....	....	....	....	138	140	142	143	144
72	....	....	....	....	....	....	....	....	....	....	145	147	148	149

ABOUT WHAT A GIRL SHOULD GAIN EACH MONTH

AGE: 5 to 8 . . . . . 6 oz.
8 to 11 . . . . . 8 oz.
11 to 14 . . . . . 12 oz.
14 to 16 . . . . . 8 oz.
16 to 18 . . . . . 4 oz.

[1] Table prepared by Dr. Thomas D. Wood. Used by courtesy of Child Health Organization.

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